ADMINISTRATION REPORT

OF

THE GOVERNMENT MUSEUM, MADRAS, THE NATIONAL ART GALLERY, MADRAS, THE GOVERNMENT MUSEUM, PUDUKKOTTAI AND THE CONNEMERA PUBLIC LIBRARY (Exchange Section), MADRAS

FOR THE YEARS

1957-58, 1958-59, 1959-60 and 1960-61

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GOVERNMENT OF MADRAS
1965

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GOVERNMENT OF MADRAS
1965

SOME OF THE MUSEUM'S SERVICES.

The Madras Museum is open to the public every day in the week, except Friday, from 7 a.m. to 5 p.m. Admission is free.

It receives parties of school children and arranges facilities for guiding organized groups of visitors round the galleries.

It arranges demonstrations to teachers from various high schools and Corporation schools in the City.

It provides a special service whereby illiterate visitors are guided round the galleries and helped to understand the exhibits.

It conducts a practical training course in Museum Technique for teachers from various schools in the State every year during the summer months.

It welcomes co-operation with learned societies; the Archaeological Society and the South Indian Society of Painters meet in the Museum. The Museum has a well-equipped theatre—the Museum Theatre—for educational lectures, dramatic entertainments, etc.

The Centenary Exhibition Hall is let out at a nominal rent of Rs. 3 for meetings of cultural organizations and Rs. 5 for exhibitions.

It has large collections which are available for study by research workers, and helps students and laymen in identifying specimens of plants, animals, minerals, coins and pre-historic antiquities.

It offers for sale to the public, coins, picture post cards, photographs and publications relating to the collections contained in the Museum.

THE NATIONAL ART GALLERY, MADRAS.

The National Art Gallery is open to the public every day in the week, except Fridays, from 7 a.m. to 5 p.m. Admission is free.

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ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, MADRAS, THE NATIONAL ART GALLERY, MADRAS, THE GOVERNMENT MUSEUM, PUDUKKOTTAI; AND THE CONNEMARA PUBLIC LIBRARY (EXCHANGE SECTION), MADRAS, FOR THE YEAR 1957-58.

GOVERNMENT MUSEUM, MADRAS.

GENERAL.

Distinguished visitors.—Among the distinguished visitors to the Museum, were Sri V. S. Hejmadi, Chairman, Union Public Service Commission, New Delhi; Sri S. N. Kanungo, Member, Union Public Service Commission, New Delhi; Sri C. Subramaniam, Minister for Finance and Education, Madras; Mr. R. Ahmed, Minister for Agriculture, West Bengal; Dr. M. M. Das, Deputy Minister for Education, Government of India; nine members of the Commonwealth Parliamentary Conference; the Rumanian Cultural Delegation headed by Mr. Richard Kuhn; His Excellency the Premier of Czechoslovakia; His Excellency the Premier of Rumania and his party; Sri Maithripala Senanayaka, Minister for Transport and Works, Ceylon.

Notable Additions to the Collections.—A unique group of Jaina Bronzes comprising two large Tirthankara figures and a figure of Padmavathi Yakshi, eighty-three silver, punch marked coins which are the earliest coins of India, received as treasure trove from South Arcot district, ten coloured leather shadow-play figures from Nellore, Andhra Pradesh, two metal mirrors widely known as Arunmula mirrors, a pair of the Black-headed or Laughing gull, a series of horns and skulls of rare game animals presented by the Bombay Natural History Society, six cases of attractive coloured pictures of African and American mammals in their natural habitat, two distribution charts relating to the sugar industry and a series of six photographs illustrative of the various aspects of the Bamboo industry were among the notable additions to the collections made during the year. The Picture Gallery of the Museum containing a series of copies of ancient wall paintings from Ajanta, Sittannavasal, Thanjavur and Ceylon, was thrown open to the public during the year.

Donations received.—The chief donations were—(1) a painting, a sandalwood mandapa and five musical instruments from Srimathi Chellammal, wife of the late Sri K. V. Ramachandran, Kesavardhini Products, Coimbatore; (2) nine photographs illustrating the various aspects of the tea industry from Sri S. M. Mookerjee, Publicity Officer, Tea Board, Calcutta, (3) a fairly large slab of sandstone with dendritic markings (from near Panna, Vindhya Pradesh) from Sri K. Santhanam, Pallavaram, Madras; and (4) a sample of Titanium dioxide powder from Messrs. Travancore Titanium Products Limited, Trivandrum.

Museum Posters.—To popularise the Museum, publicity posters in important Railway stations all over India were continued during the period under report.

Circulating collection of paintings to schools.—The circulating collection of paintings which were sent to the first series of sixteen schools have been returned by the respective schools after they had exhibited the paintings for six months in their schools. The reports sent by the heads of the schools about the impression they had of the paintings have been uniformly good and revealed great satisfaction that the students as well as the teachers of the schools had on seeing the original specimens of various ancient schools of paintings.

Demonstration to School Teachers.—A batch of 25 teachers belonging to City high schools were given demonstrations in Archaeology, Anthropology, Zoology, Botany and Numismatics on Saturdays during December 1957 and January 1958.

Exhibitions—Shankar's Weekly Child Art Exhibition.—The International Children's Art Exhibition was held for one week from 1st December 1957 by Shri K. Shankar Pillai of Shankar's Weekly at the Centenary Exhibition Hall, Government Museum.

State Child Art Exhibition.—An exhibition of children's drawings and paintings collected from the school children all over the Madras State was conducted in July 1957. One thousand five hundred and twenty-one exhibits were received, out of which only 171 were exhibited, after selection by a committee of judges. We are thankful to (1) Sri K. C. S. Paniker, Principal, School of Arts and Crafts, Madras; (2) Sri S. Dhanapal; and (3) Sri R. Krishna Rao who acted as judges. The exhibition was inaugurated by Sri C. Subramaniam, Minister for Finance and Education at the Centenary Exhibition Hall on 13th July 1957. The exhibition was kept open till 21st July 1957.

Special Exhibitions.—Three special exhibitions, one comprising a series of coloured pictures of habitant groups of American mammals, another consisting of enlarged photographs of selected specimens of Indian Wild Life, lent by the Chief Conservator of Forests, and a third comprising gold and silver coins of the English East India Company were arranged during the year.

Exhibits comprising photographs, charts, maps and illustrative specimens were also prepared for a Special Exhibition which has been planned in connection with the Centenary of the publication of Charles Darwin's epoch making work, " The Origin of Species by means of Natural Selection ".

All India Khadi and Industrial Exhibition.—The Government Museum, Madras participated in the All India Khadi and Industrial Exhibition and a specially organised stall comprising selected exhibits from the various sections of this Museum was put up during December 1957.

Gifts to Schools.—During the year under report fifteen paintings by school children of Madras, selected from a number of paintings sent for exhibition at Children's Art Exhibitions held during previous years were given away as gift to Mr. A. A. Hunter, a school teacher in Scotland. As a gift, Mr. Hunter sent us seventeen paintings and drawings by Scotish children.

Centenary Exhibition Hall.—The following exhibitions and meetings were held in the hall during the year under report :—

1. Meeting of the South Indian Society of Painters.	14th April 1957.
2. Meeting of the South Indian Society of Painters.	27th April 1957.
3. Exhibition of paintings by the Ravi Varma Association.	29th April 1957 to 3rd May 1957.
4. Exhibition of crystal art by U.S.I.S.	25th July to 31st August 1957.
5. Meeting of the South Indian Society of Painters.	24th November 1957.
6. Exhibition of bamboo and lacquer-ware by the All India Handicrafts Board, New Delhi.	15th December 1957.
7. Meeting of the Kerala Sahitya Parishad Local Committee.	29th December 1957. 12th January 1958. 25th January 1958. 9th February 1958.
8. Meeting of the All India Handicrafts Board.	13th February 1958.
9. Exhibition of paintings by the South Indian Society of Painters.	6th February 1958 to 15th March 1958.

NEW ADDITIONS TO THE COLLECTIONS.

Zoology.—The following specimens were added to the collections during the year under review :—

Molluscs.—(1) Two specimens of *Mytilus perna*, two young specimens of *Mytilus viridis* and one large specimen of the fresh water mussel, *Lamellidens corrianus;* (2) A collection of seven shell valves of the Window-pane Oyster, *Placenta placenta* from Pulicat Lake; (3) Four specimens of the large land snail, *Achatina fulica*, with the soft parts intact, from Peredynia, Ceylon.

Insects.—(4) One specimen of the Longicorn Beetle, *Bactocera rubra;*

Crustacea.—(5) Two specimens of marine prawns, one of *Peneus indicus*, and the other of *Metapeneus monoceros*, received from the Research Assistant, Tuticorin Fisheries Station.

Amphibia.—(6) One large specimen of the Bull Frog, *Rana tigrina* collected locally.

Reptiles.—(7) One specimen of the common Kurki snake, *Oligodon taeniolatus* and (8) one specimen of the striped Keelback, *Natrix stolatus*, both received from Mr. W. T. Duffy, Nungambakkam, Madras; (9) One specimen of the Common Wolf Snake, *Lycodon aulicus*, (10) One large specimen of the Common Green Whip Snake, *Dryophis nasutus* and (11) One large specimen of the Brackish water snake, *Cerberus rhynchops*, collected locally.

Birds.—(12) A collection of 58 specimens of bird skins collected at Tada by the Curator, comprising gulls, terns, herons, snipes, parrots, woodpeckers, orioles, koels, etc., (13) One specimen of the South American Conure (*Eupsittula pertinax ægninurousa*) received from the Madras Zoo and (14) Two specimens, one male and one female, of the Monal or Impeyan Pheasant (*Lophophrus impejanus*) also received from the Madras Zoo.

Mammals.—(15) One male specimen of the Short-nosed Fruit Bat (*Cynopterus sphinx*) collected locally, (16) A collection of horns and skulls of the following animals, presented by the Bombay Natural History Society (i) The Kashmir Stag (*Cervus hanglu* : horns only); (ii) The Indian Gazelle or Chinkara (*Gazella bennetti* : horns and skull); (iii) The Hog Deer (*Hyelaphus porcinus* : horns with frontlet); (iv) The Black Buck (*Antilope cervicapra* : horns with skull); (v) The Brow-antlered Deer or Thamin (*Panolia eldi* : horns with partly broken skull); (v) The Sambhar (*Rusaunicolor* : horns with skull); and (17) An abnormal specimen of the embroyo of the domestic pig with eight limbs and one head. All the specimens acquired during the year were suitably preserved, labelled, accessioned and added to the existing collections of the respective groups. The more suitable ones have been mounted and exhibited in the Galleries (vide " Additions to the Galleries ") while the remaning ones were added to the reserve collections.

Botany.—Nine photographs illustrating the various aspects of the tea industry, were received as gifts from Sri S. M. Mookerjee, Publicity Officer, Tea Board, 27 and 29, Brabourne Road, Calcutta-1.

Geology.—One uncut specimen of saphire was purchased from Srimathi Gangamma, wife of Sri Bheemi Reddi, H/o. Kunkanur, Pattikonda Taluk, Andhra State. A fairly large slab of sandstone with dendritic markings, from near Panna, Vindhya Pradesh, was received as a gift from Sri K. Santhanam, " Sundra ", Rajaji Nagar, Pallavaram, Madras. A sample of Titanium dioxide powder was received free from Messrs. Travancore Titanium Products, Limuitedu, Kochuveli, Trivandrum-7. A sample quantity of heavy sands collected at Varkala, Travancore State, by the Superintendent, was added to the Reserve collections.

Anthropology.—Five musical instruments—(1) Sarote, (2) Swarasingar, (3) Rabab, (4) Dilruba and (5) Swaramandali were presented to the museum by Mrs. R. Chellammal Kesavardhini Products, Coimbatore.

One Gottu Vina, a stringed musical instrumeunt with two gourd resonators was purchased for Rs. 150.

Two Aranmula metal mirrors were purchased for Rs. 65.

Ten leather coloured shadow-play figures from Nellore, Andhra Pradesh, of characters from the Ramayana and the Mahabharata were purchased for Rs. 150. A new folk musical instrument called Jamilika was purchased for Rs. 45.

Numismatics.—Twenty-one Indo-British gold coins (fourteen-mohurs), three Queen Victoria sovereigns (Australian issue), three one-third mohurs and one Two-pagoda, received as treasure trove from Kattumannargudi village, Chidambaram taluk, South Arcot district were added to the coin collection. Twenty-nine Arab gold coins from Manampoondy village, Tirukoyilur taluk, South Arcot district, five Indo-British old star Pagodas from Muthialput village, Conjeevaram taluk, Chingleput district, four Gajapathi pagodas from Kanakkanpalayam village, Gobichettipalayam taluk, Coimbatore district and four Indo-British Single Swami Pagodas, seventeen pagodas of Haidar Ali, twenty-one pagodas of Tippu Sultan and thirteen pagodas of Krishnaraja Wodayar of Mysore, from Vemandampalayam village, Gobichettipalayam taluk, Coimbatore district were other additions.

Eighty-three silver punch-marked coins and one silver piece from Periamambattu village, Kallakurichi taluk, South Arcot district, eight Imamis or rupees of Tipu Sultan from Indamangalam village, Dharmapuri taluk, Salem district and one silver piece, probably a punch-marked coin found along with two gold Veerarayan Panams found in Vaduvoor village, Mannargudi taluk, Thanjavur district were also added.

One silver and two gold coins of the Thughlaq King, Muhammad III bin-Thughlaq were presented to this Museum, by the Uttar Pradesh Coin Committee.

The Public (Elections III) Department, sent an eight cash piece of the Travancore Ruler Balarama Varma and a two cent piece of Ceylon, which were found in the ballot boxes at the time of the counting of votes. A copper coin of the Vijayanagar ruler Devaraya II, a rare specimen, was purchased from a private coin collector.

Archaeology.—The number of exhibits added to the collections during this year was seventy-two. They consisted of thirteen bronzes from treasure trove finds, one bronze purchased, twenty-one paintings, a set of fifteen copper plates with inscriptions, sixteen metalware articles, two textiles, three koftgari articles, one sandalwood puja mandapa, an ivory casket and thirteen toys.

This year's treasure trove images included two important sets of bronzes. One of them consisted of five Jaina images got from Singanikkuppam in the Tindivanam taluk, South Arcot district. There are the bronzes of Somaskanda and Parvati also acquired as treasure trove from Arantangi taluk, Thanjavur, which are quite good specimens of the art of bronzes of South India. The Jain bronzes and the Saivite bronzes were all in the later Chola style. Amongst the other treasure trove bronzes were small ones from Vanjinagaram in the Melur taluk of Madurai district.

Of the metalware articles purchased during the year the hanging lamp is a good example of its kind. A group of toys in wood and saw-dust painted over in the characteristic folk manner were acquired.

Among the other miscellaneous items mention may be made of the sandalwood puja mandapa got as a present. The other item got as a gift was a beautiful painting of a woman in the Ravi Varma style.

A very important collection of 17 paintings and drawings by school children between the ages of 5—16 of Scotland was acquired during the year as a reciprocal gift for fifteen paintings of school children of Madras State of the same age groups from Mr. A. A. Hunter, a school teacher of Scotland.

MAHAVIRA (Bronze).
SINGANIKUPPAM,
South Arcot District.

G. M.—1

RESEARCH AND PUBLICATIONS.

General.—During the year the manuscript and plates of the Handbook of Museum Technique were finalised and sent to the Government Press for printing. The proofs of this Handbook are now under correction. Two thousand copies of the English Handy Guide were reprinted.

The Superintendent, Government Museum, Madras, published the following articles :—

(1) " An unwanted statute " (an article on General Neil) in the special volume in Tamil published by the Information and Publicity Department on the Centenary of the First Indian War of Independence.

(2) " The Madras Museum " in the Sarvodaya special volume.

(3) " The Neanderthal Centenary "—Madras Mail.

(4) " Balanagonda Man "—Madras Mail.

(5) " The lotus in sculpture "—Broadcast talk, republished in the Bhavan journal and in a number of newspapers all over India.

(6) " Theories of Culture Change "—In the report on the UNESCO Seminar on Traditional Cultures conducted at the Madras University.

The following bulletin was published during the year as Bulletin of the Madras Government Museum (General section) in the New Series :—

1. " Early Eastern Chalukyan Sculpture " by Sri C. Sivaramamurti.

Zoology.—The Curator continued his systematic research work on the Land and Freshwater Molluscan collections in the Museum and completed the preparation of the typescript (282 pages) and twenty-one plates of illustrations for his paper on this subject to be published as a Museum Bulletin in the Natural History Series. More than 200 pen and ink drawings of Land and Freshwater Molluscan specimens in the Museum collection for this paper were prepared by the Curator himself during the year under review.

1. The paper entitled " The Amphipoda of the Madras Coast " by Sri K. Nagappan Nair was edited and sent to the Press for publication as a Museum Bulletin (Natural History section) and the first proofs were also corrected and returned to the Press during the year.

2. The Curator wrote an article on the Museum Technique Course conducted by the Madras Museum for publication in the Journal " Yojana " to spotlight the Museum activities under the Second Five-Year Plan.

3. The Curator contributed three informative articles on the Flatworms, Internal Parasitic Worms of Man and Economic Zoology to the Tamil Encyclopaedia.

4. The Curator prepared a Note on the Genesis and Growth of Research Activities of the Zoology Section of the Madras Government Museum for publication in the Madras University Handbook.

5. The Curator contributed an article on " Special Effects in Dioramic " display to the special number of the Journal of Indian Museums.

6. The Curator got ready the typescript and illustrations for a small guide book on the Snakes exhibited in the Museum for publication in the Museum Guide series.

Botany.—The Curator's paper on preservation of green botanical specimens with colour, was finalised and will be published in a scientific journal. An abstract of the Curator's talk on " The Use of Local Flora in developing Biological Course " will be published in the *Vignyan Shikshak* (Science Teacher) of the All-India Science Teachers' Association, New Delhi. An abstract of his talk on " Museums in Schools " will be published in the *South Indian Teacher*.

Anthropology.—The Curator contributed an article on " Caste " to the Tamil Encyclopaedia.

Archaeology.—The Curator continued the study of the ancient inscriptions of South India, chiefly copper-plate grants.

He also concentrated on the study of one of the outstanding contributions in art of South India, namely, bronzes in connection with the revision of the " Catalogue of South Indian Hindu Metal Images ".

Besides, the Curator has taken up the study of the origin of temple cars and their carvings—

(i) The final proofs of the bulletin " The Gopuras of Tiruvannamalai " by Dr. F. H. Gravely were corrected and sent to Press for printing.

(ii) The Curator contributed the following articles to the journals noted against each :—

(*a*) *Temple cars* (In Tamil).—Tamil Encylopaedia.

(*b*) *Art and Architecture of Tirumullaivayil*—The Hindu.

(*c*) *Some Chola Buddhist Bronzes from Kadri*.—The Hindu.

(*d*) *A stray copper plate Inscription in the Madras Museum*.—Epigraphia Indica.

(*e*) *An Ivory receptacle with carving : Siva's Marriage with Uma*.—Roopa Lekha.

(*f*) *Tamilagattin Sila Ariya Kalaikkarpanaikal (in Tamil)*.—Journal of the Colombo Tamil Sangam.

Numismatics.—The two recent hoards of Punch-marked coins, 49 from Mathur village, South Arcot district and 84 from Periamambattu village, South Arcot district were studied with a view to including them in the Catalogue of Punch-marked coins in the Madras Museum. A number of plates, classifyng the Amaravati silver punch-marked coins were also drawn for purposes of comparative study.

" Select Satavahana Coins in the Madras Museum ", a monograph by Prof. M. Rama Rao of the Nizam's College, Hyderabad is under publication.

The Curator contributed an article in Tamil in " Indo-European Numismatics " with illustrations to the Tamil Encyclopædia and another article in Tamil on " Chola Coins." to the Colombo Tamil Sangam Souvenir.

EDUCATIONAL WORK.

General.—The Madras Government Museum, participted in the Teynampet Congress Exhibition held during December 1957 and January 1958. The Curator for Zoology was in over all charge of the exhibition arrangements. All the sections in the Museum contributed to this exhibition which consisted of exhibits illustrating Natural History and South Indian Culture. Among the more notable specimens put up at this exhibition were : (i) Birds of bright Plumage, (ii) Specimens to illustrate work behind the scenes at the Museum, (iii) Natural History Hobby Collections, (iv) Colour and Beauty among Marine animals, (v) Meteorites, (vi) Gemstones, (vii) Emblems in oils of the South Indian Royal Dynasties, namely, Chera, Chola, Pandya, Pallava Vijayanagar and Vishnukundin, (viii) Two big coloured charts showing the development of the two unique scripts of Tamilnad, namely, Tamil and Grantha and the other showing select specimens of writing from the 3rd Century B.C. to 1200 A.D., (ix) Wood carvings from Kalaiyankovil in Ramanathapuram district; (x) Two bronze Natesas, one showing the *Ananda tandava* pose favoured by the Cholas and the other showing the *Marukal tandava* pose favoured by the Pandyas, (xi) Fifteen photographic enlargements representing sculptures of the various schools of South India from 200 B.C. to 1600 A.D. and (xii) exhibits and photographs illustrating ancient culture and tribal culture.

Lectures.—The Government Museum afforded facilities for examining and studying the ethnographical collections and prehistoric antiquties in the museum to the students of the Department of Anthropology of the University of Madras.

The Curator for Zoology delivered the following lectures :—

1. A lecture on Museum Techniques and preservation of Zoological specimens to a batch of teachers (undergoing the Refresher Course on Visual Aids at the Teacher's College, Saidapet) in the Museum on 22nd April 1957.

2. A lecture on Museum Techniques followed by a guided tour round the Zoology Galleries was conducted by the Curator for a batch of 50 delegates to the Educational Seminar from the Teachers' College, Saidapet, comprising Headmasters and District Educational Officers, on 12th June 1957.

3. A lecture on methods of preserving and displaying Zoological specimens was delivered by the Curator to a batch of 28 B.T. students from the Teachers' College, Saidapet, followed by a guided tour of the students round the Zoological Galleries on 19th September 1957.

4. A series of three lectures on Visual Education Service in Museums, Photography in Museum work, and the Display of Natural History Collections in Museums to the Post-Graduate Diploma Course students in Museology at the University of Baroda in November 1957.

5. A lecture on " The Functions of a Modern Museum with special reference to Zoology " at the Valedictory meeting of the Zoology Association of the Presidency College, Madras, on 12th February 1958.

The Curator for Archaeology delivered lectures and conducted demonstrations of the various subjects of Indian Archaeology to the following parties :—

(1) The Teacher Trainees in Museum Technique Course.

(2) The Teacher Trainees in audio-visual education sent from the Teachers' College, Saidapet.

(3) The Refresher Course Trainees sent from the Teachers' College, Saidapet.

(4) The Teachers of some of the City schools.

Special lectures on South Indian Art and Architecture were given—

(1) To a party of Americans headed by Dr. Arthur L. Funk, Cultural Affairs Officer, United States Information Service on 28th September 1957.

(2) To the IV and V Honours History students headed by their Professor, T. K. Venkataraman and other members of the staff of the History Department of the Pachaiyappa's College, Madras, on 17th February 1958.

(3) To the IV B.A. and IV Honours Tamil students of the same College on 26th February 1958.

(4) To the Intermediate and B.A. students headed by Mother Edith of the Stella Mary's College for Women, Santhome, in January 1958.

The Curator for Anthropology also delivered a lecture on Museum Techniques and the place of School Museums in relation to Anthropology to the delegates attending the Regional Seminar on Secondary Education.

A talk on botanical museums to the delegates of the secondary education seminar that was held at Saidapet, Madras, a talk on botanical preservation methods to the B.T. students of the Teachers' Training College, Saidapet, Madras, a talk on the use of local flora in developing biological courses, to the delegates of the All-India Science Teachers' Conference that was held in Madras in December 1957, and demonstration lectures in the galleries to batches of City school teachers, were also delivered by the Curator for Botany.

The exhibits in the Geology galleries were explained in detail to the I year L.C.E. students of the P. T. Chengalvaraya Technical Institute, Madras, who came here on an organised visit, led by an enthusiastic lecturer of theirs.

Facilities to Research Workers and others—Zoology.—1. The Curator identified a collection of Cowry shells for Sri B. C. Venkataraman of the Metal Box Company, Tondiarpet, a collection of molluscan shells, madusae, etc., for Miss Bonnell, Research Assistant, Fisheries Biological Station, Ennur, three specimens of *Mytilus* shells for Mr. Devidass Menon, Assistant Director of Fisheries, West Hill, dozen specimens of Bivalve Molluscs for Mr. P. Dinamani, Research Scholar, Travancore University, a collection of marine prawns for Mr. Mahadevan, Research Assistant, Fisheries Station, Tuticorin, two specimens of frogs for Mr. Ananthakrishnan, Lecturer in Zoology, Loyala College, Madras, and two specimens of snakes for Mr. W. T. Dufly, Nungambakkam, Madras.

2. Dr C. P. Gnanamuthu, Director, University Zoology Research Laboratory was helped with the loan of an old volume of Fauna of British India on Reptiles and Amphibians by Boulenger in connection with his research work.

3. Prof. B. Bonnell, Professor of Zoology, New College, Royapettah, was helped with information on the methods of collection and preservation of Myriapods and on the available specimens of Myriapods in the Museum collection.

4. Mr. Noel L. H. Krauss, Entomologist, Board of Agriculture and Forestry, Honolulu, was helped with information on carnivorous land snails for use in Biological Control of pests like *Achatina fulica.*

5. Facilities were provided for Dr. B. Sundara Raj for his systematic work on fishes in the Laboratory of the Zoology section.

6. Attenders from the Minerva Tutorial College, Madras, Venkateswara College, Tirupati and Central Marine Fisheries Station, Mandapam, were given practical training in Taxidermy and Zoological preservative methods for a fortnight, during September 1957.

Archæology.—1. Mr. Wolf of Madras was given information on a Tibetan image and banners of Tibet on 31st May 1957.

2. The Director of the Cultural Affairs Department, Government of Ceylon was taken round the Archaeological and Art Galleries on 21st October 1957.

3. Mr. Asa Briggs, Professor of Modern History, Leeds University, England was given information on South Indian sculpture and temple architecture on 24th October 1957.

4. Mr. James C. Harle, a research student working on South Indian Gopurams who was working in Madras State between October 1957 and January 1958 was given facilities to pursue his work by furnishing necessary information about South Indian temple architecture and iconography.

5. Sri Rai Krishna Dasa, Honorary Director, Bharat Kala Bhavan, Banaras, was given facilities to examine South Indian bronzes and Amaravati sculptures on 28th and 29th October 1957.

6. Dr. Mrhotra of the Bureau of Psychology, Allahabad was taken round the Archaeological Galleries and was given information on the development of South Indian scripts on 28th October 1957.

7. Messrs. N. R. Joshi, Deputy Secretary to Government of India, Ministry of Education, was given facilities to study the monuments of Kancheepuram and Mahabalipuram on 27th October 1957.

8. Mr. R. Ahamad, Minister for Agriculture, West Bengal Government, was taken round the Archæological and Art Galleries on 30th October 1957.

9. The members of the Commonwealth Parliamentarians Conference were taken round the galleries on 25th November 1957.

10. Mrs. Coats and Professor Coats of New York were taken to the reserve collection room where wood carvings were kept to enable Mrs. Coats to examine and

study them. She was also helped to photograph a few wood carvings. Information regarding the age, locality and the identification of the carvings was furnished to her on 27th November 1957.

11. Minoru Oaka, Professor of Yokohama National University, Tokyo was given facilities to study the Buddhist antiquities in the Museum. He was given particulars about a variety of sculptures from Amaravati on 5th December 1957.

12. Messrs. Anil de Silva Vigers of Kandy, Ceylon, was given facilities to examine the photographic collection and was given particulars about the South Indian bronzes and sculptures on 7th December 1957.

13. Dr. George Artola, Fulbright scholar in Sanskrit from Baltimore, U.S.A., was given facilities to study photographs of Buddhist sculpture relating to Panchatantra stories on 8th December 1957.

14. Mr. U. Win Baw, Vice-Consul, Burmese Consulate, Madras was given facilities to go through the volumes of Archæological Report by A. Cunningham and was given particulars about various sacred places of Buddhism in North India on 11th December 1957.

15. The Rumanian Cultural Delegation were taken round the Archæological Galleries on 5th January 1958.

16. Mr. Sirokay, the Prime Minister of Czechoslavakia and party were taken round the Archaeoloigcal and Art Galleries on 12th January 1958.

17. Prof. Dr. Werner Speiser, Director of the Museum of Far Eastern Art, Cologne, West Germany, was given facilities to study Buddhist and Hindu sculptures and was furnished with details about two dozen special exhibits from our collection for incorporation in his catalogue of art objects on 30th January 1958.

18. Professor Margin Micwoswki, Professor of Physics of Cracow University, Poland, was taken round the Galleries on 23rd February 1958.

19. Professor Levastaine, Reader in Comparative Religion, Sorbonne University, Paris, was given information on South Indian temple rituals and architecture on 26th February 1958.

20. The Prime Minister of Rumania and party were taken round the galleries on 16th March 1958.

21. Mrs. Fox, wife of Dr. Fox, Tuberculosis Specialist, was given facilities to study bronzes and helped in identifying her collection.

Anthropology.—Sri G. N. Das, Research scholar was afforded facilities to continue his work on the megalithic pottery of Southern India in this Museum. Dr. B. Ch. Chhabra, Government Epigraphist, Ootacamund, was given facilities to examine the Mohenjodaro seals in this Museum. Dr. F. R. Allchin and Mrs. Bridget Allchin, scholars from the School of Oriental and African studies of the University of London were afforded facilities for studying the Foote collection and the Arikamedu antiquities of this Museum. Mr. K. V. Soundararajan, Superintendent for prehistory, Department of Archaeology, New Delhi, was afforded facilities to examine, sketch, study and photograph the stone age collections in this Museum from the Soan valley, Kushalgarh, Chauntra, the Narbada valley and the Chou-kou-tienian tools from China.

Information on museum exhibits and research topics was given to the following :—

Mr. Govindachari, Research scholar in Anthropology of the Government of India, working at the University Department of Anthropology, Madras was given information on the literature of village studies in India and the caste system. Mr. M. S. Gopalakrishnan, Lecturer in Anthropology of the University of Madras was given information on research topics in Tamil literature and South Indian Communities. Professor Kenjiro Fujioka of Kyoto University of Japan was given information on the stone age collections

of this Museum. Dr. J. T. Cornelius former Vice-President of the Archaeological Society of South India was given information on the megaliths and the Bronze Age in South India. Professor K. N. Kaul of the Botanical Gardens of Lucknow was given information on the cinder mounds of Bellary. Professor V. Muddalinganna of the Mysore University was given information on the working of the section of Anthropology of this Museum. Dr. T. Jayavelu, Anatomist. Madras Medical College was given information on Museum technique and literature thereon. Mr. E. S. Thangam, Forest Utilisation Officer, Madras was given information on Museum equipment and organisation. Mr. Husseni, Forest Utilisation Officer Madras, was given information on the aboriginal tribes of the Madras State. Dr. Van der Sleen of Holland was given information on ancient Souh Indian glass beads. Dr. Geoges Oliver of the Medical College, Pondicherry, was given information on research topics in physical anthropology of South Indian Communities.

Information on coins was given to the following.—Mr. N. Arumugam of Tiruchirappalli, Mrs. Fox of Madras, Mr. V. Chokalinga Mudaliar, etc. The Curator also identified a coin colection which belonged to an Engineering student from Coimbatore.

Botany.—The practice of affording facilities to research workers and others continued. The beneficiaries, amidst others, included Mr. Noel, L. H. Krauss, Entomologist, Hawaiian Board of Agriculture and Forestry, Hawaii and Sri Narayanan of the United States Consulate, Madras.

WORK IN THE GALLERIES.

ZOOLOGY.

Additional to the galleries.—The following additions were made to the various galleries in the Zoological section during the year under review :—

Invertebrate Gallery.—(1) A medium-sized shell of the Giant clam (*Tridacna sp.*) presented by Sri Sethurama Chettiar of Pondicherry was exhibited in the Pelecypoda wall case in the Invertebrate Gallery.

Foreign Animals Gallery.—(2) The specimen of the South American Conure (*Eupsittula pertinax aeginurosa*) received from the Madras Zoo was mounted and exhibited in the Macaw Parrot show case.

(3) Six new flat, picture wall cases were made and fitted up in this gallery for exhibiting attractive, glass-bound pictures and photographs illustrating the fauna of different countries and other interesting topics in General Biology, as follows :—

(i) Two cases : Ten coloured pictures of habitat groups of North American Mammals.

(ii) One case : A set of six coloured pictures of Birds of the Pacific.

(iii) One case : A set of five coloured pictures and one photograph of animals of the African jungles.

(iv) One case : A set of six photographs illustrating Endocrine Glands and their Functions.

(v) One case : A set of seven photographs illustrating processes in Museum Technique.

Amblubia and Reptile Gallery.—(4) The newly acquired specimen of the Bull Frog (*Rana tigrina*) was mounted in a large, rectangular glass jar and exhibited in the Amphibia wall case (5) The large, freshly collected specimen of the brackish water snake, *Cerberus rhynchops* was mounted and exhibited in the systematic series of snakes in the Reptile Gallery to replace an old and faded specimen.

Bird Gallery.—(6) An attractive coloured picture of the Brown-headed Stork-billed Kingfisher (*Ramphalcyon capensis quiral*) was framed and exhibited near the kingfisher case (7) A pair of specimens of the Black-headed or Laughing Gull (*Larus ridibundus* : male and female) collected by the Curator at Tada, Nellore district, were mounted and exhibited in the Sea Gulls case.

Mammal Gallery.—The skulls, frontlets and horns of the Kashmir Stag (*Cervus hanglu*), The Brow antlered Deer (Panolia eldi) and the Sambhar (*Rusa unicolor*) presented by the Bombay Natural History Society were suitably mounted on newly made teak wood sheilds and exhibited on the wall with bold wooden labels.

General Gallery (Comparative Zoology, etc.).—The frontlet and horns of the Hog Deer (*Hyelaphus porcinus*) and the skull and horns of the Indian Gazelle (*Gazella bennetti*), presented by the Bombay Natural History Society were exhibited with printed glass-bound labels in the sloping case devoted to Integumentary Structures of Mammals.

2. (*b*) *Improvements to the Galleries.*—The following improvements, repairs and renovations were effected in the Zoological Gallaries during the year under review :—

Foreign Animals and General Galleries (*Comparative Zoology, etc.*).—(1) The background panels of the six newly made picture wall cases were painted pale grey for better display.

(2) Specimens of the recently acquired Brahminy Duck and Tragopan were transferred to this Gallery from the Bird Gallery and rearranged along with the Mandarin Duck, Macaw Parrot, etc., to form a series illustrating Birds of Bright Plumage.

Bird Gallery.—(3) The recently acquired specimen of the Mute swan was exhibited in a separate spacious newly made case with descriptive label and a map showing its migration and distribution; the interior of this case was painted pale green for better display.

Coral Gallery.—(4) The interiors of ten wall caes, the Amoeba model case, Sponges systematic case, Deep Sea Sponge case and the Sea Fans (Gorgonia) flat table case were lined with fresh, yellow khadi drill cloth, replacing the old and soiled cloth linings in these cases, for better display (5) The interiors of the central coral show cases in this gallery were painted dark steel grey to improve the display (6) The Kinorhyncha explanatory diagram in the Coral Gallery wall case was re-drawn, re-labelled and re-exhibited with fresh calico binding as the old diagram was discoloured.

Invertebrate Gallery.—(7) The re-organisation of the Echinoderm Section in the new show case was completed during the year, and several of the specimens of sea urchins, cake urchins and star-fishes were mounted on the vertical display boards of suitable background colour and provided with glass struts behind, for better diplay (8) The interiors of ten sloping show cases containing shells, and three cases containing marine crabs and lobster and one wall case with specimens of Pelecypoda were lined with fresh yellow Khadi drill cloth to replace the old and discoloured cloth linings in these cases (9) The black interiors of the Myriapoda, Insect Nests and Prochordate show cases were thoroughly repainted with pale cream coloured paint to improve the display.

Fish Gallery.—The interior cloth linings of twelve sloping show cases containing systematic series of fish specimens, which were discoloured and soiled with rain water stains, were repainted with pale blue distemper to improve the appearance.

In addition to the above improvements, all the show cases in the Foreign Animals, Birds, Mammals, and Fish Galleries were varnished. The routine weekly checking of the Galleries by the Curator, dusting of the interiors of show cases, cleaning of the glass panes of show cases, provision of naphthalene balls for show cases, replacement of broken glass panes, rectifying minor defects, refilling, bladdering and painting of gallery specimen jars and provision of Lysol and campher solution and powdered naphthalene for gallery insect cabinets and exhibition boxes, were continued during the year as usual.

2. (*c*) *Labelling*—The old discoloured labels in different galleries were replaced by freshly printed ones. New explanatory labels were prepared for those specimens which were added on to different galleries during the year. Some bilingual labels (English and Tamil) for some of the specimens exhibited in the Foreign Animals Gallery and the Mammal Gallery were put up.

Preservation of Reserve collections.—The Curator proceeded systematically with the refilling of specimen jars with rectified spirit or formalin as the case may be. Napthalene-Lysol-camphor plugs, etc., were provided for the insect cabinets, reserve collection almirahs.

Birds' skins, etc., systematically. The old, discoloured and moth eaten labels on the reserve collection containers were replaced by labels written in waterpoof Indian ink.

ANTHROPOLOGY.

Additions to the galleries.—Two new exhibit cases were put up for Australian and American Indian ethnographical materials which were lined with cloth and painted with distemper.

Improvements to Reserve collections.—The work of numbering anew the specimens in the Foote collection of Prehistoric and Protohistoric antiquities wherein numbers were getting fast effaced was in progress.

The five newly acquired musical instruments, Sarote, Swaramandali, Rabab, Dilruba and Swaragat presented to the Museum by Mr. Chellammal of Kesavardhini Products, Coimbatore, were completely renovated and restrung.

Two old musical instruments (i) Mayuri and (ii) Swaragat were renovated by restringing.

One bronze drum, Nagara or Danka, was renovated.

Improvements to the Galleries.—The exhibit of the microliths among the stone age exhibits in the Prehistoric antiquities gallery was re-arranged, the board renovated and specimens exhibited with fresh labels.

The exhibit of the clay figures of Grama Devatas from Tanjore, the clay and wooden figures of the sea fishermen of Orissa which were borrowed by the Handloom Board for an exhibition at Venice and returned in a highly damaged condition were repaired and exhibited again in the galleries concerned with fresh labels.

The case containing the Brass Bhutas from South Canara was lined with cloth, distempered and rearranged and exhibited again.

Four musical instruments, 1. Sarangi, 2. Suriapurai, 3. Chandra Pirai and 4. Tambattam were repaired, renovated and exhibited again.

A very fine specimen of an ivory inlaid Swaragat presented to the Museum in 1950 by the Zamindar of Palayampatti was restrung, repaired, renovated and exhibited in the Musical Instruments Gallery in place of the old specimen of Swaragat which was stored in the reserve collection.

Six sloping cases in the Adichanallur Gallery were renovated by painting the cloth lining inside with distemper and rearranging the exhibits and labels.

The Savara and Khond cases were repaired and the broken glass panes renewed.

The case containing the miniature models of cannon and mortar was renovated by painting the cloth lining with distemper and the provision of new labels.

The Adichanallur iron implements after preservative treatment were classified and rearranged in the respective sloping cases.

Labelling and preservation.—The labels illustrating the newly treated iron implements in the Adichanallur Gallery sloping cases were completely renewed and the new labels were displayed to illustrate the revised classsification of the exhibits.

The labels displayed in the Savara Tribal case and the Savara Musical Instruments and jewellery case were completely renewed by new labels.

Two distribution maps, 1. of the Savaras and 2. of the Khonds were renewed.

A photographic enlargement illustrating the Gadaba tribal case was renewed and provided with a fresh label.

The labelling of the Arms Gallary exhibits was in progress. The older faded labels were being replaced by new bilingual labels.

The photographs and photographic enlargements exhibited in the Savara and Khond bases were rebound and exhibited with fresh labels.

The ten Andhra shadow play figures acquired during the year were given preservative treatment with castor oil and rectified spirit.

Botany.

Additions to the galleries.—The exhibits relating to the sugarcane industry were supplemented with two attractively-mounted charts. Three samples of bactro-agar, sodium alginate and alginic acid were added to the exhibits of sea weeds of commercial importance. Three photographic enlargements illustrating the cultivation and harvesting of paddy were exhibited with the cereals. Six photographs illustrating some of the important aspects of the bamboo industry, were exhibited with the bamboos.

Improvements to the galleries.—Four old show cases housing a large collection of specimens of South Indian timber were reconditioned. The number of herbarium drawers of five of the vertical show cases in the systematic Botany galleries was reduced and in their stead the show cases were provided with cup-boards. This has not only provided more storage accommodation for reserve collections but also improved the general appearance of the show cases themselves.

Labelling and preservation.—Twenty-six old colour pictures of plants, and one photograph of an abnormal plant were poisoned and protected against insect ravages. Two thousand six hundred and thirty-three reserve herbarium specimens, ranging from Ranunculaceae to Acanthaceae, were re-poisoned.

Twenty-three new labels were prepared for the specimens of *Ephedra gerardiana*, tobacco industry and sea weed products, for the photographs of abnormal banana plant and tea industry and for sugarcane charts.

Geology.

Additions to the galleries.—One uncut specimen of sapphire was added to the gem stone exhibits in the galleries. One large slab of sandstone with dendritic marking was exhibited with the rocks.

Improvements to the galleries.—Sixty-seven old labels in the galleries and the index numbers on thirty-one exhibits of dressed and polished building stones were re-touched and brightened up The fluorescence exhibit developed trouble and was repaired and re-exhibited One thousand six hundred and sixty-seven Geology Index Gallery collections were stored in cupboards and the gallery itself was closed down, making room for organising a picture gallery. All the exhibits of the South Indian building stones were re-indexed. The display of 42 exhibits of gem stones was improved on new lines.

Labelling and preservation.—Two new labels for the exhibits of building stones were painted. Two new labels for the exhibits of gem stones were prepared. Seven new labels for the exhibits of meteorities were prepared and neatly mounted. One permanent and insect proof label for the specimen of sandstone with dendritic markings was prepared. One old label of the General Geology exhibits was renewed. One thousand eight hundred and fifty-four labels in the Geology Index galleries were renewed and 49 labels in the same galleries were painted. Index cards were prepared for 100 exhibits in the galleries.

Numismatics.

Work in the section.—A total number of eighty accessions were transferred to the Stock and Sales Register (Accn. No. 665-744). The study of Amaravati coins was completed and the coins (7,666 in number) were returned to the Andhra Government.

A further batch of 150 metal cast sets were prepared in January 1958, out of which 70 sets have already been despatched to schools.

Work in the galleries—Labelling.—The labels for the seals exhibited in the gallery were renewed and glass bound. A large label painted on wood was put up for the historical documents case.

Ten new labels were written for the ten documents exhibited in this case.

ARCHAEOLOGY.

Additions to the galleries—Now Extension Gallery.—The Bhattipurolu reliquaries and gold flowers, etc., were displayed here.

Improvements to the galleries—Metalware Gallery.—All the show cases of this gallery which were varnished more than a decade ago and therefore had an unattractive look were taken up for varnishing and the work was completed.

As usual, periodically the exhibits in these show cases were dusted and cleaned and the glass panes of the show cases were also cleaned inside and out.

Thanks to the Public Works Department, the ceiling of this gallery was repaired using the same kind of coloured paper as was used previously. This has changed the dull looking gallery into a pleasent looking one.

Picture Gallery.—The large frames of the copies of murals from Tanjore were properly fixed with batons so as to prevent insects from entering into the frame and spoiling the painting.

Labelling.—Labels for thirty-five exhibits in the New Extension Gallery were renewed. Labels for fifty exhibits in the Hindu sculptures Gallery were renewed.

In the Amaravathi Gallery forty new labels were displayed in place of those which had become eaten up by moths, and six new label brackets were provided.

In the Jain sculpture Gallery labels were provided for the inscribed pillars and the photographs of the Jaina temple from Tirupparuttikunram.

In the Picture Gallery, a large sign board was put against the stairs so as to direct the visitors to the mezzanine floor of the Geology Gallery where the pictures and copies of murals were exhibited. In the Vaishnavite Images Gallery fifteen labels, in the Saivite Images Gallery seventeen labels were remounted and displayed respectively. For five images from Nagapattinam new labels were provided.

In the Metalware Gallery labels for the treasure chest, the glazed pottery and the temple utensils from South Kanara district were provided.

Preservation.—During the year forty-seven metal images were sent for cleaning to the Chemical Conservation Section. Simple cleaning of the images in the galleries themselves was also done. The reserve collections were also periodically examined and cleaned wherever necessary. The paintings, especially the copies of the large panels of murals from Tanjore, were got treated with insecticides by the Chemist.

Welding of broken metal images.—A very important item of preservation work was to get fifteen specimens of bronzes which were broken in a variety of ways repaired in our presence, and the repairs were done satisfactorily. As an instance, the Aiyanar on elephant exhibited in the Saivite Images Gallery which was broken into bits was sucessfully repaired and the repaired portions could not be easily detected.

Restoration and preservation done in the Chemical Conservation Section—Bronzes.—During the year under review, thirty-nine bronzes were treated in this laboratory and successfully restored. The images were treated electrolytically and then washed throughly with water to effect complete removal of the electrolyte and reduced corrosion products. Smaller bronze objects were treated in Rochelle salt solution. One bronze image of Natesa which was of large size and hence could not be placed in the cells was treated with Rochelle salt solution. Two per cent vinyl acetate solution was coated on the images as preservative coating.

Iron implements, etc.—Four hundred and two iron objects such as chisels, spades, arrow heads, lamps, bells, iron bangles, long iron pins, horse bits and cage gallows, etc., were given a preservative coating of molten paraffin wax. Broken objects were restored to their original form by cementing them with paraffin wax.

Coins.—Five thousand four hundred and twenty-two silver punch-marked coins were received for treatment. The coins, as received, were covered with corrosion products of varying colours such as green, black, brown and sometimes white. About two thousand coins were treated in 10 to 25 per cent formic acid and brushed. The coins which were adhering together were separated after about four hours' treatment with formic acid. The coins were dried after thorough cleaning and brushing. The remaining coins were treated in 2 per cent dilute sulphuric acid. This method was found to be quicker and more satisfactory. In both the above methods, the coins were weighed individually before and after cleaning. It was found that the loss of weight was negligible.

Seven thousand six hundred and forty-six punch-marked silver coins obtained from the Andhra State Government were weighed in two hundred and thirty-four weighings. The average weight of one hundred and ninety-one different types of coins was calculated and tabulated accordingly.

Coins of the Mambalam hoard were analysed chemically to find out the constituents. Metallurgical examination was also conducted in the Madras Institute of Technology. On the basis of this study, the Curator prepared a paper on " The Metallurgical Techniques of Punch-marked Coins ".

Sixty bronze coins were treated with dilute Rochelle salt solution. Five Taxila punch-marked coins were cleaned by the electro-chemical method using zinc and hydrochloric acid.

Eighty-three South Arcot punch-marked silver coins were cleaned in formic acid and weighed before and after cleaning. The weight of the coins ranged from 1.2294 gms. to 3.4402 gms. The maximum and minimum loss of weight due to cleaning were 5.7 per cent and 0.25 per cent respectively. The average loss of weight was found to be 2.68 per cent.

Stone sculptures.—Fifteen stone sculptures in the Amaravati sculpture Gallery were treated with paper pulp, allowed to dry for three weeks and finally coated with 1 per cent vinyl acetate solution in the surface. This preservative treatment prevented the surface layers from crumbing to a white powder.

Research and publications.—Experiments on stain removal were conducted.

Experiments were also carried out in strengthening old textiles of different colours, printed and dyed, by pasting Kashmir chiffon on either side of the textile and on only one side of the textile in the case of printed bits. Maidha flour paste with 2 per cent mercuric chloride was used as a cementing material. This method of reinforcing textile was found to be satisfactory. Apart from the article on " The Metallurgical Techniques of Punch-marked Coins " mentioned above, (which was submitted for publication in the special number of the Journal of Indian Museums) the Curator prepared the following articles during the year: " Restoration and conservation of ivory, bone and horn ", " Restoration and conservation of objects made of iron, lead, stone and wood " and " The study of Punch-marked silver coin weight standard, with special reference to the Mambalam and Bodinaikanur hoards ".

PHOTOGRAPHIC WORK.

Zoology.—Prints of the Alaskan Brown Bear Group under construction, Flamingo Group and the front facade of the Mirrorscope Exhibit in the American Museum of Natural History, New York, were prepared and added to the Zoology Sectional Album to illustrate the latest developments in the field of Museum Display. Prints showing portraits of Charles Darwin, H.M.S. " Begale " in which he travelled and the fauna of the Galapagos Islands were also prepared and added to the Zoology Sectional Album in connection with the Centenary of the " Origin of species " by Charles Darwin.

Numismatics.—The half size negative of Amaravati punch-marked coins, and two quarter size negatives of two medals in the section were prepared. Photographs of Amaravati punch-marked coins, and of the Medals, " India 1857 " and " Relief of Lucknow " and enlargements of the photographs of ten Indian coins were added.

Anthropology.—Nineteen half size negatives and nine quarter size negatives were added to the collection of negatives in the anthropological section. Of these, seven were of pre-historic antiquities and the rest ethnographical subjects and materials, including three of the Andhra shadow play figures which were recently acquired.

Archæology.—During the year thirty-seven half size photographs, forty quarter size photographs and 137 films totalling to 222 were made.

Botany.—Two lantern slides of the exhibits of oil press and teakwood were prepared. Four-text-book photographs of Charles Darwin's imporant contemporary botanists were copied. Two photographs to show the sleep movements in the Rain tree were prepared.

Geology.—One lantern slide of the exhibit of the Giant Ammonite was prepared.

ADMINISTRATION REPORT OF THE NATIONAL ART GALLERY, MADRAS.

During the year the total number of visitors to the Gallery was 88,446 and the daily average was 272. The distinguished visitors to the Gallery included the following :—Sri V. S. Hejmadi, Chairman, Union Public Service Commission, New Delhi, Sri S. N. Kanungo, Member, Union Public Service Commission, New Delhi, Sri C. Subramaniam, Minister for Finance and Education, Madras, Sri R. Ahmed, Minister for Agriculture, West Bengal, Dr. M. M. Das, Deputy Minister for Education, Government of India, Nine Members of the Commonwealth Parliamentary Conference, Rumanian Cultural Delegation headed by Richard Kuhn, His Excellency the Premier of Czecheslovakia, William Siroky, His Excellency the Premier of Rumaunia, Chivu Stoica and his party, and Maithripala Senanayaka, Minister of Transport and Works, Ceylon.

The growing popularity of the institution will be known from the following extracts from the Visitors' Book :—

Mr. R. Ahmed, Minister of Agriculture, West Bengal, Calcutta, wrote on 30th October 1957, " Impressed with bronze figures ".

Dr. M. M. Dass, Deputy Minister for Education, Government of India, New Delhi, wrote on 8th January 1958 " Very much impressed ".

Mr. Missonio Marion, Poland, wrote on 23rd February 1958 " It is possible to see this level of arts in very few places of the world ".

Mr. Brilling Wilhem, Poland, wrote on 23rd February 1958 " Very deeply impressed ".

Dr. G. M. Kurulkar, Bombay-16, wrote " Enchanted by Nataraja ".

Dr. M. P. Shenoy, M.B.B.S., Mangalore, wrote on 6th August 1957 " I have been extremely pleased to see the collections in the National Art Gallery ".

Mr. Samson Selig, 112, C. P. South, New York wrote on 23rd October 1957 " Impressive collections showing great historical and art interest ".

Mr. Asa Briggs, Professor of History, Leeds University, England, wrote on 23rd October 1957, " A magnificent collection ".

Mr. R. R Diwakar and Vithalbhai Jhaveri, wrote on 1st December 1957, " Rama and Sita and Nataraja are worth anything in the world ".

Dr. M. Syed Ali, Superintendent, Radium Institute, Hyderabad Deccan, wrote on 31st December 1957 " Excellent Museum that I have ever seen ".

Arthur T. Coluson, Rochester, New York, wrote on 11th March 1958 " Fine collection of miniatures ".

The work of labelling begun last year was completed for the exhibits in the main hall. Providing of labels for the paintings in the rear room has been taken up.

The National Art Gallery Committee was reconstituted in G.O. Ms. No. 2048, Education, dated 11th December 1957, with the following as its members.—

Sri M. Ananthanarayanan, I.C.S., Chairman.

Sri G. Venkatachalam, Member.

Sri V. Kannaiyan, Deputy Secretary to Government, Health, Education and Local Administration Department, Fort St. George, Madras-9, Member.

Sri K. C. S. Panicker, Principal, School of Arts and Crafts, Madras, Member.

Sri A. Aiyappan, Superintendent, Government Museum, Madras, Convenor.

National Art Gallery, Pantheon Road, Madras-8, (Signed) A. AIYAPPAN,
30th May 1958. *Superintendent.*

ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, PUDUKKOTTAI.

GENERAL.

Extra-mural activities, and assistance to educational institutions.—Sri S. L. Shukia was furnished with the information sought for regarding Quartz and its occurrence in the area. Sri K. Haridas, a tourist from Bombay was acquainted with the archæological treasures of the territory. Information on the vegetable dyes employed in the Pudukkottai area was furnished to the Dye Reesarch Laboratory, Madras-20. The Rural Industries Officer, Madras was helped with particulars of Fibres and Fibre yielding plants in Pudukkottai State. Sri G. K. Ramachandra Ayyar, a local Advocate, was helped with the required particulars about the inscriptions in the Siva temple at Rangiyam.

Help was given to start museums in the local Government Basic Training School, and the Government Training College.

Visitors.—The number of people who had visited the Museum during the year was 146,339 and the daily average was 526.

Eighty-two educational institutions were benefited by their visit and 41.40 per cent were literate. The number of educational institutions that had visited the museum last year was 70 and the percentage of the literate visitors was but 29.06.

Distinguished visitors.—The Museum was attracting as in the previous years eminent scholars and people of rank. the most notable being Srimathi Rukmani Devi, M.P., of the " Kalakshetra " at Adayar. As would be seen from the visitors' book every one of them has expressed high appreciation of their visit to the Museum.

Galleries, buildings, and gardens.—The Galleries were rearranged and made attractive. Nine new show cases were added. Photographs, illustrated charts, and internal illumination of a few show-cases aided by arresting bilingual name-boards, and labels had made the galleries very imposing, interesting and useful. The Wing housing the Cochin murals was better illuminated by the addition of two more electric lights.

The special repairs taken up as early as 25th February 1957 were being continued, and when finished, the buildings will present a better and more imposing appearance.

The gardens continued to add their charm and usefulness to the Museum as before.

WORK IN THE SECTIONS.

Botany.—The attractive photographs and instructive charts added to the wing on the " External morphology of Flowering Plants " had made the Gallery very prominent and interesting. Suitable bilingual labels for exhibits, and large name-boards for the show-cases were also put up.

Zoology.—This section was the centre of attraction of the people. Besides the photographic illustrations and large instructive charts were put up suitably in their respective galleries, what are known as " Dioarmas " were prepared sucesstully, and displayed. These miniature habitat groups of animals consisted of a painted landscape behind in the background, and a foreground containing the animals set in their natural surroundings which were represented by modelled accessories, such as grass, vegetation, and rockwork. A beginning had been made very successfully with regard to the Arthoropoda, the Starred Tortoise (*Testudo elegans*) and a few reptiles, some common birds, the White-breasted water-hen, Ducks, Sandpipers, and Plovers and the Flying-Fox or the Fruit-Bat (*Pteropus medius*). It is hoped to build more of these attractive exhibits gradually.

Geology.—A few minerals in the " General collections " which remained unlabelled were identified, and labelled.

Agriculture.—A photograph of the cultivation of rice (*Oryza sativa*) in Japan, a vegetable chart, and photographs with critical notes on the cultivation of the coconut palm (*Cocos nucifera*) were put up. The old samples of seeds and manures were replaced by fresh ones; so were the old and worn out labels. The section was continuing to attract visitors from rural areas.

Art and Industries.—In the Picture Gallery an etching of the 18th century view of the Pagoda at Rameswaram by Henry Salt was put up. Six-coloured photographs showing the " Dances of India " were prominently displayed. A wooden spinning wheel (Charka), a relic of the Pudukkottai Darbar, was presented by the Revenue Divisional Officer, Sri T. V. Vasudevan, and it was exhibited in a show-case made specially for it.

Anthropology.—A few photographs on social anthropology were added to the Ethnology wing. A map of the Pudukkottai territory showing the prehistoric burial sites was prepared, and displayed properly in the Prehistory-Gallery.

Archæology.—This section as usual was dominating over the others in attracting visitors and scholars from within and without India. A map of India showing the location of historical monuments, was put up at the entrance. The photographs of the chief places of interest in India displayed in the section were lending their due charm and interest to the visitors. A map of India of the time of the Buddha prepared and exhibited by the side of the Jain Gallery was inviting the attention of visitors. So was the map of the Pudukkottai area showing the Jaina vestiges along with the photographs of the Jain monuments in the area. The display of the exhibits in this section was made very pleasing and attractive by improving their background by distinctive colours, and exhibiting their photographs by their side.

Numismatics.—There were no additions. The old collection of 2,118 coins comprising 980 gold, 280 silver, 42 lead, 8 nickel, 797 copper and 11 cupric alloys was checked, and rearranged properly. A catalogue of them will shortly be attempted.

Research and Publications.—An illustrated article on " Ugra Narasimha ", a peculiar coin in this Museum, was prepared, and sent to " Lalit Kala ". Another article illustrated by photographs, on an interesting bronze of 9-10 Century A.D. " Alinganachandrasekharamurti " (Siva embracing Parvati) in the Museum was prepared, and sent to the Special issue of the Journal of Indian Museums.

The work on the sculptures of Kodumbalur (10 Cent. A.D.) and the " Flora of the Pudukkottai Territory " was being pursued.

Government Museum, Pudukkottai,
24th April 1958.

T. S. SUNDARAM,
Curator.

ADMINISTRATION REPORT OF THE CONNEMARA PUBLIC LIBRARY, MADRAS.

Exchanges.

The number of institutions sending their journals in exchange for the Museum Bulletins was 179 and the number of different journals received from those institutions was 200. The number of standard works sent by them was 12. During the year under report the following institution was added, viz., National Museum of India, Rashtrapati Bhavan, New Delhi. Twenty-seven institutions in India were removed from the Exchange list as they were obliged to send their publications gratis to this Library under the Delivery of Books Act, 1954.

Connemara Public Library, Madras.
25th May 1958.

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Librarian.

ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, MADRAS, THE NATIONAL ART GALLERY, MADRAS, THE GOVERNMENT MUSEUM, PUDUKKOTTAI AND THE CONNEMARA PUBLIC LIBRARY (EXCHANGE SECTION), MADRAS, FOR THE YEAR 1958-59.

GOVERNMENT MUSEUM, MADRAS.

GENERAL.

Distinguished visitors.—Among the distinguished visitors to the Museum were the Hon'ble Mr. Maithipala Senanayake, Minister of Transport and Works of Ceylon, His Holiness Sri Sankaracharya of Kanchi Kamakoti Peedam, Honourable Mr. D. G. Grando, Minister for Labour, Co-operation and Social Service of Trinidad and the Honourable Mr. Kamaluddin Mohammad, Minister for Agriculture, Lands and Fisheries of Trinidad; Mr. Kenneth Bradey, Director of Commonwealth Institute, London, Dr. P. C. Sestieri, Archaeological Commissioner, Ceylon; Dr. L. P. Witterborg, Consultant of the National Museum of India from the American Museum of Natural Histoy, New Yok; His Excellency the Governor of Madras visited the Museum on 18th March 1959 and spent about two hours evincing great interest in the Archaeological and other sections. Special facilities were also afforded in receiving a batch of Naga leaders, the Members of the 26th sessions of the Central Advisory Board of Education, a batch of trainees of Orientation Training Centre, Himayatsagar, a group of students from England, United States of America, Australia, Holland, South Africa, etc., touring the world over, a party of 300 village officers from Bihar State, a delegation of Chinese artists, a batch of teachers attending the Zonal Seminar on Audio-Visual Education and a party of Indian Foreign Service Probationers.

Museum Posters.—To popularise this Museum, publicity posters at important Railway stations all over India with the caption "Visit the Government Museum, Madras", were continued to be exhibited during the year under report.

Special Exhibitions.—Darwinian Centenary Special Exhibition: A special exhibition to mark the Centenary of Charles Darwin's epoch making work, "The Origin of species by means of Natural selection" was held in the Zoological galleries for about a month commencing from 19th July 1958. The exhibition consisted of photographs, charts, maps, diagrams, models and specimens illustrating the life and work of Darwin and his contemporary naturalists, his exploratory voyage round the world on board H.M.S. "Beagle", the strange fauna of the Galapagos which he visited and explored, exhibits and charts to explain Darwin's theory or Organic Evolution and his ideas on variation and adaptation in animals and plants, the classification of plants in the form of charts, the sequence of select plant records down the ages, photographs illustrating sleep movements in plants, insectivorous plants, etc., the formation of coral reefs, the descent of man and his position among the Primates and selected examples of animals of evolutionary interest. The exhibition proved to be of great educative value and attracted a large number of students from schools and colleges in the city.

Wild Life Week.—A special exhibition of enlarged photographs of the wild animals of India was held in the Zoological Galleries of this Museum during the Madras State Wild Life Week.

Children's Art Exhibition.—The Shankar's Weekly International Children's Art Exhibition was held this year as usual at the Centenary Exhibition Hall in January 1959. An "On the spot competition" in drawing open to all the children of the schools in the City was conducted by the Superintendent, Government Museum at the Presidency Training High School on the opening day of the exhibition.

Demonstrations to School Teachers.—The annual museum demonstrations were conducted for the benefit of teachers of the various local high schools, on museum subjects, during the month of December, 1958, and January, 1959 on Saturdays. This yera 66 teachers from the various City schools participated. These demonstrations which

were well attended by school teachers enabled the teachers to organize and conduct visits and excursions of parties of school children to the Museum and make them educationally useful.

Loan of Paintings to Schools.—Over two hundred original paintings of the Tanjore, Mughal, Rajasthani, Kangra and Delhi Schools of painting, mostly of the 18th and 19th centuries were classified into sixteen sets and each set was loaned for exhibition in one school for six months.

Audio-Visual Aids.—Twenty-nine sets of electroplated metal casts of the coins of India, representative of the coinage of India through the ages, were sold to the educational institutions under the visual education scheme.

Essay Competition.—An essay competition for the Dr. B. Sundar Raj Prize on the subject "How a visit to the Museum has helped me to understand the culture and past history of my country" was held. One hundred and sixty-one entries from VI form students of forty-four high schools in the Madras State were received. The prize of Rs. 7 in the form of popular books of History and Archæology was awarded to Sri P. S. Gopalan, a pupil of VI Form of Sethupathi High School, Madurai.

Museum Technique Course for Teachers.—Under the training programme of the educational department included in the Second Five-Year Plan two batches of school teachers were given training in Museum technique during the year under review. This intensive course for the organisation of school museums is being held during summer vacations as a regular educational feature of this Museum. During this year 65 teachers were given such training, 32 in the first batch and 33 in the second batch. It is to be regretted that all the 80 teachers selected for undergoing the training were not able to attend. It is hoped that the Director of Public Instruction would select in the future a number of candidates in reserve so that the technical facilities offered in the museum may be fully utilised.

Notable Additions to the Collections of the Museum.—Among the notable additions to the collections of the Museum this year were 235 Indo-British gold pagodas, 29 bronze images chief among which were a Chandrasekhara Parvathi group and a Somaskanda group besides a number of miniatures, a few stone sculptures of Vishnu, Lakshminarayana and Devi. Forty-one stone tools and two wooden spear throwers made and used by the Australian aborigines, seven engravings in colour by R. Krishna Reddy, a water colour by Sarada Ukil and two oil paintings by T. R. P. Mookiah.

Donations Received.—Among the donations received this year are a collection of painted pottery from Coimbatore district presented by Sri I. Mahadevan, I.A.S., Sub-Collector, Pollachi, six decorations of the Royal Court of Combodia, two ivory inlaid boxes and a pair of ivory inland sandals presented by Sri T. R. Sethurama Chettiar of Pondicherry.

Centenary Exhibition Hall.—The following exhibitions and meetings were held at the Hall during the year under report :—

1. Meeting of the Kerala Arts Centre—20th April 1958.
2. Meeting of the Kerala Arts Centre—13th July 1958.
3. Exhibition of the All-India Handicrafts Board—16th September to 7th October 1958.
4. Meeting of the Kerala Arts Centre—16th October 1958.
5. Exhibition of K. Bhaskara Rao—26th October to 4th November 1958.
6. Meeting of the Kerala Arts Centre—16th November 1958.
7. Meeting of the Madras Zoological Society—6th December 1958.
8. Exhibition of South Indian Society of Painters—20th to 22nd December 1958.
9. Exhibition of the India-China Friendship Association—2nd to 6th January 1959.
10. Meeting of the Madras Zoological Society—7th January 1959.

New additions to the collections.

Zoology.—The following specimens were added to the collections during the year under review :—

Molluscs.—One specimen of the Nudibranch, *Kalinga ornata*, three specimens of the Pleurobranch, *Euselenops winkworthi* and a single large right valve of the Pearl Oyster, *Pteria lotorium* from Tuticorin, which has proved to be a new record for India.

Insects.—Forty-four specimens of butterflies, including species of *Euploea*, *Danais*, *Papilio*, *Terias*, *Zetides*, etc., collected by the Curator locally.

Fishes.—One large specimen of the Blobe Fish (*Tetrodon reticularis*) collected from the Madras Beach.

Birds.—A pair of the Common Indian House Swift (*Micropus affinis affinis*) a Cirmson-breasted Barbet, *Xantholema haemacephala*, a female specimen of the Indian Koel, (*Eudynamus scolopaceus*), one brightly coloured specimen of the South American Macaw Parrot (*Ara. sp.*), received from the Madras Zoo, one large female specimen of the Ostrich, (*Struthio camelus*) from the Madras Zoo, and a pair (male and female) of the Great Bustard (*Otis tarda*), also received from Madras Zoo.

Mammals.—One female specimen of the North American Raccoon (*Procyon lotor*), a fairly large specimen of the Indian Tiger (*Panthera tigris*) and one of the Indian Sloth Bear (*Melursus ursinus*), mounted in life-like poses on artificial rock pedestals and two horns of the African Rhinoceros. The rhino horns were presented by Sri Sethurama Chettiar of Pondicherry.

Photographs, Murals, etc.—A series of 12 enlarged photographs of the following Indian wild beasts, about 10 inches into 12 inches in size, purchased from Sri M. Krishnan, Member, Indian Board for Wild Life—Indian Tiger, Lion, Hunting Leopard, Jungle Cat, Himalayan Black Bear, Indian Procupine, Sambar, Chital, Nilgai, Clouded Leopard, Great Indian one-horned Rhinoceress and Black Buck, and one large mural measuring 12 feet by 6 feet, painted by Sri K. C. S. Panicker, Principal of the Government School of Arts and Crafts, Madras depicting Wood Ibises and Snake birds in their natural haunts. All the specimens acquired during the year were suitably preserved, accessioned and added to the existing collections of the respective groups.

Botany.—A chart showing the trends in the latest system of classification of plants, and a chart of *Daucus carota* showing the phenomenon of variations within species, were neatly prepared in the Section. Prints in black and white, of the 606 blocks of textile designs of our indigenous art and industry, were prepared with the kind co-operation of the Master Dyer of the All-India Handicrafts Board, Madras. Twelve colour transparencies relating to similar designs of repute, were also prepared and added to our collection of lantern slides, with the kind co-operation of Mis Alice Moshier, Professor of Art, Skidmore College, Saratoga Springs, New York, U.S.A.

Geology.—Two oil paintings on canvas (one depicting a lunar landscape with earth as seen from the moon, and the other depicting a comet at dwan), and small hand specimens of eight minerals, namely, orpiment, pumice, pyrope, non-gem grade ruby, green-and-brown soapstone and crystalline corundum were purchased for the geology galleries.

Anthropology.—A small collection of painted pottery, a large wide-mouthed burial urn and a few iron implements in a fragmentary condition from an urn burial in Coimbatore district were acquired for the museum as a gift from Sri I. Mahadevan, I.A.S., Sub-Collector, Pollachi.

Two mural paintings, " (1) Neanderthal Famly Group and (2) Cromagnon artists decorating their cave," were made by Sri K. C. S. Paniker, Principal, School of Arts and Crafts, Madras, at a cost of Rs. 2,000 for decorating the prehistoric antiquities galleries. A collection of 41 stone tools made and used by the Australian aborgines today including several types of adze stones, end scrapers, knives, points, microliths and core tools and two specimens of spear throwers used by Australian aborigines were obtained from

Dr. H. M. Hale, Museum Director and Professor T. D. Campbell, Curator for Anthropology, South Australian Museum, North Terrace, Adelaide on an exchange basis.

Numismatics.—Two hundred and thirty-five gold pagodas of the English East India Company found as treasure trove in Thalapatti village, Kulathur taluk, Tiruchirappalli district were acquired. One Dutch 4¼ stuiver piece of Ceylon, one Andhra lead coin and 27 copper coins of Ceylon, Australia, France, Belgium, Great Britain, etc., were purchased from private individuals.

Six decorations of a courtier (Mandarin) of the Royal Court of Cambodia, French Indo-China were presented to this Museum by Mr. T. N. Sethurama Chettiar of Pondicherry.

An Austrian medal with the Head of Austric Councillors, Alois Von Frizberg and the coat of arms of the family Von Frizberg on the other side was presented by Dr. Harald Von Frizberg.

Archaeology.—During the year 26 items of sculptures, in bronze and stone and three metal utensils were added to the collections from treasure trove finds. Besides these, 18 miscellaneous articles were also added to the collection.

Among the treasure trove articles acquired, the following deserve special mention. There is a bronze Somaskanda sculputre which is a good specimen of the art of bronzes as obtained in the late Chola period. The Chandrasekhara image in bronze acquired from Keelkudi in the Nannilam taluk of the Tanjore district is a good specimen of its kind. It is important also on account of the fact that it is long since an image of Chandrasekhara was acquired from treasure trove finds or through purchase. Then comes the group of small bronze images acquired from Neduvakkottai, Mannargudi taluk of the Thanjavur district. Prominent among them are the usual image of Aiyanar riding on an elephant. An interesting image of this kind shows the elephant with four tusks. The Aiyanar figure of this group is beautifully done.

The ten paintings mentioned above consist of seven coloured engravings, a water colour and two in oils. The engravings are extremely interesting not only from the point of view of technique but also from the point of view of the subjects they portary. The technique of engraving employed here is very much in vogue in France and few Indians artists have specialised in this field. So these paintings being good specimens of the technique, when displayed in the galleries will stimulate young artists of this part of the country to emulate the artist and achieve distinction in this field also. From the point of view of the visitors to the Museum these paintings will open a vista of the tremendous strides the art of modern painting has taken and the capacity of Indian artists to react to them favourably. The water colour represents a rare theme, namely the birth of the seven tunes which is handled with consumate skill by the renowned artist, Sarada Ukil of New Delhi.

WORK IN THE GALLERIES.

Zoology—Additions to the galleries.—The following exhibits were added to the Zoological Galleries during the year under report :—

Coral Gallery.—Two specimens of the Sea pen. *Virgularia* sp. were mounted and exhibited in the Coarl Gallery to replace an old and disintegrating specimen.

Invertebrate Gallery.—A fresh specimen of the Nudibranch, *Kalinga ornata,* with brightly coloured spots on the dorsal side was mounted in a glass jar and exhibited in the Molluscan wall case.

Fish Gallery.—One specimen of the Globe Fish (*Tetrodon reticularis*) was mounted and exhibited in the Fish Gallery.

Bird Gallery.—A pair of the Common Indian House Swift (*Micropous afflnis affinis*, a Crimonson-breasted barbet (*Xantholema haemocephola*) and a pair (male and female) of the Monal or Impeyan Pheasant (*Lophophorus impejanus*) were stuffed, mounted on suitable stands and exhibited in their respective places in the Bird Gallery. The newly made Mural depicting Wood Ibises and Snake birds in their natural haunts was exhibited on the wall in this gallery.

Mammal Gallery.—A female specimen of the Raccoon (*Procyon lotor*), one specimen of the Indian Tiger, and one specimen of the Indian Sloth Bear, mounted on artificial rock-like pedestals, were exhibited in the Carnivora cases in the Mammal Gallery.

Foreign animals Gallery.—An egg of the Ostrich was mounted in a glass-fronted box and exhibited in the Cassowary case. One specimen of the South American Macaw Parrot (*Ara sp.*), and two (a male and a female) specimens of the Great Bustard (*Otis tarda*) were mounted on suitable wooen pedestals and exhibited in the Foreign Animals Gallery.

General Gallery (Comparative Zoology, etc).—Twelve photographic enlargements depicting specimens of Indian Wild Life such as the Indian Lion, Tiger, Hunting Leopard, Black Buck, etc., puchased from Sri M. Krishnan, were suitably mounted with glass and calico and exhibited in two central show cases in the General Gallery.

Improvements to the galleries.—The following improvements, repairs and renovations were effected in the Zoological Galleries during the year under review.

Coral Gallery.—Six explanatory diagrams in the Coral Gallery wall cases which were old and discoloured, were completely re-drawn with Indian ink, provided with freshly printed labels, re-bound with fresh calico, and re-exhibited.

Invertebrate Gallery.—One large panel containing a series of photographs of insect nests was bound with glass and fresh calico and re-exhibited in its case, as the cellophane binding was giving way and the card-board mount was warping.

Fish Gallery.—The wooen back panels in all the sloping show cases in this gallery were painted with pale blue varnish paint and the interior cloth linings in these cases were distempered with fresh pale blue distemper wherever they were stained and disfigured by rainwater stains.

Mammal Gallery.—The background panels and interiors of the following show cases in the Mammal Gallery were painted with pale grey paint to improvve the display in accordance with the general colour scheme for show case interiors in this Gallery—(i) Dugong, (ii) Elliot's Dolphin, (iii) Langurs, (iv) Insectivora and (v) the two cases containing specimens of Rodentia. A photograph showing the position of man among the Primates was rebound with fresh calico and re-exhibited in the Langurs case in this gallery.

The routine weekly checking of the galleries by the Curator, dusting of the interiors of show cases, cleaning of the glass panes of show cases, provision of naphthalene balls, replacement of broken glass panes, rectifying minor defects, refilling, bladdering and painting of the gallery specimen jars and provision of lysol and camphor and powdered naphthalene for the gallery insect cabinets and exhibition boxes were continued during the year as usual.

Labelling.—The old discoloured labels in different galleries were replaced by freshly printed ones. New explanatory labels were prepared for those specimens which were added on to different galleries during the year. Some bilingual labels (English and Tamil) were prepared for some of the specimens and put up in different galleries.

Preservation of Reserve collections.—The Curator proceeded systematically with the refilling of specimen jars with rectified spirit or fromalin (as the case may be); worn out washers of some of the Kilner jars were also replaced. Naphthalene, new lysol-camphor plugs ,etc., were provdied for the insect cabinets and reserve collection drawers containing shell collections, reserve collection admirahs, bird skins, etc., systematically. The old discoloured and moth eaten labels on the reserve collection containers were replaced by fresh labels written in water-proof Indian ink.

BOTANY.

Additions to the galleries.—Two photographs to illustrate the "Sleep movement" in the Rain tree, one chart to illustrate "Variations within species", and another chart to illustrate some of the trends in the latest system of classification of plants, and 26 colour pictures of plants with their characteristic floral diagrams, were the new additions to the systematic Botany Galleries. Specimens of prickly-pear, water lily and water-hyacinth (preserved with their natural colours) were the new additions to the Ecology Galleries, for illustrating xerophytic and hydrophytic vegetations. Eight photographs, five of them relating to "Cereals" and three to "Tea", were the new additions to the Economic Products Galleries.

Labelling and preservation.—The newly collected specimens of prickly-pear, water lily and water hyacinth were treated for colour retention and preserved with colour. One thousand four hundred and forty-six herbarium specimens of the reserve collections ranging from Acanthaceae to Orchidaceae, were repoisoned. Forty-five hand-written labels in the Economic products Galleries ,were replaced by printed ones. Index cards were prepared for 180 exhibits.

GEOLOGY.

Additions to the galleries.—There charts illustrative of the sequence in which some of the important fossil plants appeared on the earth, were added to the exhibits in the Stratigraphy galleries.

Improvements to the galleries.—One show-case containing a large specimen of corundum, was renovated. The cloth-lining in the centre cases for "Rock salt", Quartz, and Soapstones, was renewed.

Three charts illustrating the sequence in which some important plant fossils appeared on the earth, were neatly mounted for display in the galleries. A sample of Titanium dioxide powder was neatly mounted for exhibition. Eighteen new labels were prepared two of which were neatly painted. Labels of 89 exhibits in the Mineralogy Galleries. were given a better display in glass mounts. Index cards were prepared for 60 exhibits.

ANTHROPOLOGY.

Additions to the galleries.—(1) The American Indians and their culture and (2) The Australian aborigines and their culture were put up in the Ethnology Gallery of the Museum in two new vertical cases.

The exhibit, "Man's near relations" specially prepared for the Centenary of Darwin's Origin of species" was added to the Ethnology Galleries. This exhibit consists of (1) the skulls of the Orangutan, the Chimpanzee, the Gorilla and man to represent man and his near relations and (2) the plaster cast restorations of the skulls and endorcranial casts illustrating the brains of the Ape Man of Java, *Pithecanthorpus erectus*, and the Neanderthal Man of Europe, *Homo neanderthalensis* and photographs of Cromagnon Man and the Ape Man of Peaking, *Sinanthropus pekinensis*, to represent types of early man (3) skulls to illustrate the Australoid, Negroid, Mangoloid, and Caucasoid racial types of modern man.

Improvements to the galleries.—Three sloping cases in the Pre-historic antiquities galleries were renovated by painting the inner cloth-lining of the cases with distemper.

The distribution maps for the tribal cases exhibiting the ethnographic materials, hut models, etc. of the Chenchu, Kadar, Kanikar, Khond, Hillmen of Travancore, Toda and the Savara were renewed by preparing fresh maps, binding them and displaying them in the cases concerned.

Labelling and preservation.—The following exhibits in the Arms galleries were illustrated by bilingual labels :—Handguns, matchlocks, blunderbusses, musketoons, mortars, wall-pieces, chain mail armour, plate armour, powderflasks, grape shot chain

shot, cannon, cannon balls, battle axes, and spears. The labels of the miniature models of cannon, a mortar, the stage gun of Tipu Sultan of Mysore and Chinese helmet were renewed.

The routine inspection of the gallery and the reserve collection specimens their cleaning, dusting and provision of naphthalene, renewal of broken glass panes for cases and the annual preservative treatment of musical instruments with rectified spirit and castor oil, of ethnographic materials of vegetable origin with melted paraffin wax in turpentine was carried out this year as usual.

NUMISMATICS.

One hundred and sixteen items were transferred from the accessions to the Stock and Sales register. A total of five hundred copper coins out of the pre-1932 stock of copper coins were identified and classified.

A hundred and fifty sets of electro-plated casts of Indian coins were prepared during 1958–59 and out of these, 76 sets have already been sold to schools.

ARCHAEOLOGY.

Improvements to the galleries—New Extension Sculputure Gallery.—Damaged masonry pedestals in the gallery were repaired.

Memorial Sculpture Gallery.—The broken snake-stone showing a dancing Krishna in between two serpents, was cemented properly. The labels of this gallery which were originally fixed to the brass rods were all fixed on the walls as they were tampered with when they were fixed to the brass roads.

Hindu Sculpture Gallery.—The show-cases containing the models of temples in plaster of Paris were rearranged so as to provide room for the model of Sanchi stupa.

Jain Sculpture Gallery.—The four photographs showing the temples and sculptures of Tirupparuttikundram were dusted and cleaned and their frames were painted a new.

Metal Images Gallery.—In almost all the show-cases here the lining cloth which had come off, was refixed properly. Two of the show-cases, at the head of the flight of steps, were provided with a lining of yellow khadi, and the lining in the remaining show-cases which had become decolourised due to the spilling of rain water were distempered afresh. In the Vaishnative images gallery the lining of the show cases kept against the wall opposite the entrance had become decolourised. So it was distempered to remove the stains. Besides, periodically all the show-cases were dusted and kept tidy.

Metal-ware Gallery.—Three small show-cases in the gallery were provided with glass panels. In seven show-cases, the patti had come off and this was provided afresh. The board containing ivory chessmen was bound afresh and the chessman fixed properly and displayed.

Labelling.—About 200 decolourised labels in the galleries of the New Extension, the Hindu sculpture and the Buddhist sculpture were replaced by fresh ones.

Preservation.—About ten metal images were sent to the Chemical section for electrolytic treatment. Seven wood carvings were chemically treated. Besides, a number of bronzes which developed white and green patches were treated in the gallery.

RESEARCH AND PUBLICATIONS.

Zoology.—The Curator, after having completed his work on the Land and Fresh-water Molluscan collections in the Museum, undertook a preliminary survey of the Myriapods in the Museum collections. The Curator also commenced a systematic study

of the South Indian Lepidoptera in the collection of the Madras Museum and proceeded with the systematic study and examination of the specimens of *Papilionidae* in the reserve collections. A study of the relevant literature was also undertaken. The Curator was also engaged in examining and reporting on a new record of Pearl Oyster collected off the Coast of Tuticorin and in studying interesting fresh material of lamellibranchs received from localities in the West Coast.

The Curator contributed two articles, one on the " Life and Work of Charles Darwin " in collection with Darwinian Centenary, and another entitled " Fossils Worth a Fortune " to the Sunday edition of the *Hindu*. He also contributed an article on the " King Crab " to the *Sunday Standard* and another entitled " A Treasure House of Antiques " detailing the activities of the Madras Museum to the Annual number of the *Madras Information*. The Curator also prepared an illustrated article on " Snails and Clams " for the Christian College Biology Association Diamond Jubilee Souvenir and a paper on a new record of a Pearl Oyster for publication in the Journal of the Zoological Society of India. Arrangements were made to invite quotations from private presses for printing the paper on the Land and Freshwater Mollusca prepared by the Curator, Dr. S. T. Satyamurthi, as a Museum Bulletin. The final proofs of the paper on the Amphipoda of the Madras Coast by Sri K. Nagappan Nair, which is under publication as a Museum Bulletin, were corrected and returned to the press for striking off the clean copies.

Botany.—The Curator's paper on " Green Colour Preservation of Plants" was published in the Jounal of the Madras University, B. Vol. XXVIII, 1958. Also, articles on " Museums in Schools " and on the " Value of Museums in Secondary Education " were contributed by him to the South Indian Teacher, Vol. XXXI, Nos. 5 and 8, 1958. Early proofs of the Handbook of Museum Technique were received from the press and corrected. The manuscript for a general illustrated handbook of this Museum, was also got ready for publication.

Geology.—Articles on " Museums in Schools " and on the " Value of Museums in Secondary Education " was contributed by the Curator to the South Indian Teacher, Vol. XXXI, Nos. 5 and 8, 1958. The manuscript for a general illustrated handbook of this Museum, was also got ready for publication.

Anthropology.—A paper on " Megalithic survivals among the Mudugas of Attapady Hills ", Kerala, by Dr. A. Aiyappan, Superintendent, Government Museum, and Mr. C. J. Jayadev, Curator for Anthropology, was published in the journal *Aduivasi*.

The Curator for Anthropology, Mr. C. J. Jayadev, read a preliminary paper on his work, " An Ethno-historic study of the Tali rite in Southern India " before the Archaeological Society of South India. The paper was entitled " Reference to the Tali rite in Tamil Classical Literature ".

The Curator for Anthropology contributed articles on (i)Myths, (ii) Trades, Barter and Currency and (iii) The Koyas to the Telugu Encyclopaedia.

The Curator for Anthropology contributed an article on South India Funerary Customs in response to a questionnaire from the Committee of Funerary Service History of the United State of America.

Numismatics.—" Select Satavahana coins in the Madras Museum ", a monograph by Prof. M. Rama Rao of the Nizam's College, Hyderabad, is in the final stages of publication.

Archaeology.—The Curator continued the study of the Jain sculpures and of the copper plate grants. In the meantime, he took up the study of the South Indian Bronzes with a view to bring up-to-date the catalogue of Hindu Metal Images in the Madras Museum, a bulletin of the Museum which has remained out of print for a long time. The Curator has completed the first part of the work which deals with subjects like style, chronology, archaeology and the cultural import of the bronzes.

The Curator published the following articles :—

(1) A stray copper plate in the Madras Museum.—Epigraphia Indica.

(2) Tamilin Pazhamai—Kalvettukkal Kurum Tamil Murasu of Malaya.

(3) Chidambarattil Sivalilaichirpangal in Tamil—Kaveri Kumbakonam.

(4) Buddhism in South India was prepared and sent for publication in the Bihar Buddhist Society Souvenir.

(5) An article entitled " Tamilagattu Sila Aduisayakkalai Karpanaigal " in Tamil was prepared for the Ceylon Tamil Sangam's maiden issue.

(6) An article entitled " Types of South Indian Vimana " was prepared for Artibus Asiae.

As per G.O. Ms. No. 652, Education, dated 30th March 1959, the Curator also wrote (in English) the book entitled " Temples of South India " running to 150 pages for the Southern Languages Book Trust, and he has also prepared a Tamil version of it.

Arrangements have been made to reprint the following books :—(1) Indian Epigraphy and South Indian Scripts, (2) An Outline of Indian Temple Architecture, (3) Guide to the Buddhist Antiquities in the Madras Museum, (4) Guide to the Archaeological Galleries and (5) Illustrations of Indian Sculpture, mostly Southern.

EDUCATIONAL WORK.

Special Exhibitions—Zoology.—(i) A special exhibition commemorating the " Centenary of Charles Darwin's " Origin of species was arranged in the Zoological Galleries in July 1958. The following exhibits were prepared and put up :—Portraits of Charles Darwin, map showing the voyage of *H.M.S. Beagle* round the world, photographs illustrating the fauna of the Galapagoes Islands, charts showing the evolution of vertebrates, tree of evolution, specimens to show variation, adaptation and evidence of evolution and selected specimens of animals of evolutionary interest such as Limulus, Amphioxus, Junugle fowl, Barnacles, etc., (ii) A special exhibition of photographic enlargements of Indian wild animals was held for a fortnight commencing from 4th October 1958, in connection with the Wild Life Week.

Botany.—Two special exhibitions were conducted during this year : one as a part of the exhibition to mark the Centenary of Darwin's " Origin of Species," and the other as a separate exhibition to bring out the importance of the bamboo as raw material for the manufacture of rayon.

Anthropology.—The anthropological section of this Museum participated in the special exhibition held to commemorate the Centenary of the publication of Darwin's epoch-making work on evolution. " The Origin of species " (1) A series of skulls of the great apes like Orangutang, Chimpanzee and Gorilla illustrating man's near relations in the animal world were exhibited. Another series of skulls illustrated races of mankind of the present, like Australiod, Negroid, Mongoloid and Caucasouid. Plaster casts of restorations of skulls and the interior of the skulls (endocranial casts to reconstruct the brain forms) and photographs of the races of early man depicted the course of human evolution in time. Charts and photographs illustrated some of Darwin's contemporary exponents of evolution like Herbert Spencer in Sociology and T. H. Huxley in Physical Anthropology. (2) A special exhibition of talis or marriage emblems worn by South Indian Women was held at the museum in December 1958. The exhibit included some of the principal types of talis and bottus worn by women of most of the communities in South India The practice of tying the tali around the neck of the bride as the principal rite of marriage, its significance of the wedded state of the woman and its removal on the widowhood of the woman is met with not only among most of the Hindu communities but also among Christians and Muslims as well. The custom is unique in South India and is met with among most of the Tamil, Telugu, Kannada, Malayalam and Marathi speaking communities. Among the ornaments used, three main types are distinguished. One is the talisman or amulet type, the other is the bottu type used among Andhra, Kannada and Maharashtra peoples and the third the Tamil types.

Lectures—Zoology.—' The Curator delivered a series of three lectures to the students of the Government Arts College and Presidency College, Madras, at the Museum on the following subjects, under the scheme newly sanctioned by Government under the Second Five-Year Plan (*a*) Collection and Preservation of Invertebrates, (*b*) Economic Zoology, (*c*) South Indian Molluscs—their classification and Ecology, (ii) The Curator also delivered a series of two lectures in Museology to the diploma course students of Museology at the University of Baroda on the following subjects :—(*a*) Care and Preservation of Museum objects, (*b*) Care and preservation of biological materials in a Museum.

Batany.—A lecture on preservation and display of Museum specimens was delivered to a batch of students from the University of Baroda and another similar lecture was also delivered to the delegates of the Zonal Teachers' Seminar.

Geology.—A lecture on the preservation and display of Museum specimens was delivered to a batch of students from the University of Baroda, and another similar lecture was also delivered to the delegates for the Zonal Teachers' Seminar.

Anthropology.—The Curator for Anthropology, Mr. C. J. Jayadev, gave two courses of special lectures to the students undergoing the certificate and diploma courses in Anthropology of the University of Madras. These students were also given practical training in the study of enthonographical materials, prehistoric antiquities and in anthropometry. The Curator also gave the following special series of three lectures for the benefit of University students (i) Stone age in South India, (ii) Marriage Rituals in South India and (iii) The Andamanese way of life. Facilities were afforded to the University of Madras for the conduct of the practical examinations for the Diploma in Anthropology at the Government Museum, Madras, as usual.

Numismatics.—The Curator gave a series of three lectures on " Evolution of Indian coinage ", " North Indian coins " and " South Indian coins " to college students under the Second Five-Year Plan programme during the months of October and November 1958.

Archaeology.—The Curator delivered a series of lectures on South Indian Archaeology at various institutions.

The Curator also took classes in Archaeology for the two batches of Teacher trainees of the Museum Technique Training Course held at the Museum.

Facilities to Research Workers and others.—Zoology.—(i) Information on the poison fangs of the Cobra was furnished for Mr. S. Natarajan, Junior Assistant to the Chemical Examiner to Government, in connection with a criminal case.

(ii) The Curator identified the following specimens :—

(*a*) A newly recorded species of Pearl Oyster (*Pteria lotorium*) from Tuticorin, for Mr. Mahadevan, Research Assistant, Fisheries Biological Station, Tuticorin.

(*b*) Specimens of Opisthobranchiate molluscs for the Zoology Department of the Madras Christian College.

(*c*) Specimens of Mytilids and other lamellibranchs for Sri P. Dinamani, Research Scholar, Marine Biological Laboratory, Trivandrum.

(*d*) A specimen of the Sooty Tern for Mr. Anantaraman, Lecturer in Zoology, Madras Veterinary College.

(*e*) A collection of freshwater prawns for Mrs. Abraham, Research Assistant of the Madras Inland Fisheries Department, Chetput.

(iii) Students of the B.Sc., and M.Sc. (Zoology Main) classes of the Pachiappa's College were afforded the necessary facilities for studying the named osteological material contained in the galleries and in the reserve collections of this Museum.

(iv) Sri J. Asirvadam, attender, Zoology Department, American College, Madurai, and Sri Cyril, attender, St. Joseph's College, Kozhikode, were given training in Taxidermy for a period of about a fortnight from 1st to 15th October 1958.

(v) Instruction in methods of preserving Zoological specimens and the general care and maintenance of Museum exhibits was given to Mr. Hussaini, Range Officer, deputed to this Museum for training by the Forest Utilisation Officer, Madras, during March 1959.

(vi) An egg of the Emeu, sent to the Museum for preservation by Sri T. N. Anantha-krishnan, Professor of Zoology of the Loyola College, Madras, was blown out, preserved and returned to the sender for the College Departmental Museum.

Botany.—All facilities were afforded to Prof. Alice Moshier of the Skidmore College, New York to study and photograph our collections of textiles and to take prints of 90 textile designs from our blocks.

Anthropology.—Prof. N. Isaac of the Andhra Christian College, Guntur, was afforded facilities for studying the R.B. Foote and P.P. Manley stone-age collections of this Museum in relation to the prehistory of Andhra Pradesh.

Sri S. P. Gupta, Department of Archaeology, Nagajunakonda, was afforded facilities for studying the ethnographical collections in this Museum of the Agency tribes and the painted pottery from Coimbatore recently acquired.

Mr. J. P. C. Robertson, I.S.A. (Scots) Roseberry, Kirkintilloch, Dunbartonshire, was afforded facilities to study the Madrasian stone-age tools of this Museum. Prof. T. Nagahirao and Prof. T. Ueno of Kyoto University, Japan, were afforded facilities to study the early art history of India.

Information on Andhra shadow play figures was given to Dr. Mallampalli Somesekhara Sarma, the eminent Andhra historian, to Mrs. J. Francis Jones, to the Royal Anthropological Institute, London, and to Mrs. Joan Tate, Shrewsbury, England.

Information on laboratory equipment in Physical Anthropology was given to Sri C. Krishnamurthy of the Anatomy Department of the Medical College, Pondicherry.

Information on rice flour designs or "Kolam" was given to Sri G. N. Das, M.A., L.L.B. Research Scholar, Cuttack.

Information on folk paintings of Andhra shadow play figures was given to Sri Narayanan of the Imperial Tobacco Company of India.

Information on the castes and tribes of Andhra Pradesh was given to Mr. E. Wood, No. 5, Sobori Road, Colaba, Bombay.

Information on the caste system was given to Miss. R. I. Bedford, Research Analyst, Research-*cum*-Action Project on Environmental Sanitation, Poonomallee.

Prehistoric antiquities and stone-age collections were identified for Sri D. Dorairaj, Tutor in Englsh, Presidency College, Madras, and for Sri Ananda Mohan, B.A.B.L., Madras.

Information as to topics and contributors in Sociology and Anthropology was given to Dr. G. V. Sitapati and Sri O. Narasimhamurthy of the Telugu Basha Samiti, Madras-5.

Numismatic.—Punch-marked coins were identified for Sri S. T., Srinivasagopalachari and South Indian Copper Coins for Sri V. Chokalinga Mudaliar.

Archaeology.—Prof. Dotson, Adviser on Political Science to the Government of India, was given information on Indian sculptures and bronzes; Mr. R. Kuppuswami, I.P.S., was furnished with information on a few bronzes; Mr. Maitripala Senanayaka, Minister of the Government of Ceylon, was assisted in going thorugh the various galleries of the Art and Archaeology sections; His Holiness Sri Sankaracharya of Kanchi Kamakoti Peedam paid a visit to the Museum and appreciated the various kinds of exhibits in the Archaeological Section; Mr. Tewari, the photographer of the Department of Archaeology, Government of India, was given facilities to photograph a group of Amaravati sculptures; the Superintendent of the Archaeological Section of the Indian Museum, Calcutta was given facilities to photograph some of the exhibits in the Archaeological section. A party of post-graduate students of the Economics Department of the Madras University were given

demonstration in Archæology. Two ministers from Trinidad of the West Indies were taken round the archaeological galleries and they evinced great interest in the sculptures. K. Divan K. Dohaman, a Fulbright scholar from the Haryard University, United States of America was given information on South India Buddhist vestiges of late medieval times. Mr. I. Mahadevan, I.A.S., of the Ministry of Industries and Commerce was given facilities to compare a few Vijayanagar copper plate grants and he was helped to decipher a grant of the same period. His Excellency the Ambassador of Austria in India was given facilities to study the Buddhist and Hindu sculptures; Mother Edith, Professor of Art of the Stella Marris College, Santhome, Madras, was given facilities to study the collection of slides and she was helped by lending a number of slides. Mr. Gibson, a Professor from an Autralian University, was given information on South Indian temples and South Indian Wood works; the Director of Industries and Commerce, Government of Madras, represented by the Principal of the metal working school of Swamimalai, was given facilities to photograph bronze Natarajas; the Sthapati sent bly the Director of Industries and Commerce, Government of Madras, was given facilities to make a wax model of the famous Tiruvelangadu Natesa. The Chinese Delegation consisting of artists were given facilities to examine the sculptures and bronzes. Dr. Sir Mortimer Wheeler, a former Director-General of Archaeology in India, was given facilities to examine the collections of sculptures and bronzes in the Galleries. Miss Indira, a research student working under Prof. T. Balakrishnan Nayar, Principal, Presidency College, Madras, was given facilities, on more than one occasion, to examine the albums of photographs and the sculptures representing Dakshnamurti and Dr. K. N. Puri, Deputy Director-General of Archaeology in India and Mr. C. Sivaramamurti, Keeper, National Museum of India, New Delhi, who were deputed by the Government of India, Ministry of Scientific Research and Gultural Affairs, for selecting exhibit for exhibition abroad were given facilities to examine the collections of sculptures and bronzes.

Gifts, loans, exchanges, etc.—Anthropology.—A small collection of stone tools, beads and plaster casts of South Indan coins was given as a gift to the Children's Library and Museum at Cuttack, at the instance of Srimathi P. Das, B.A., Convenor, Nair Seva Sangh, Cuttack, Orissa.

A representative collection of stone tools and two spear throwers or WOMERA made and used to-day by the Australian Aborigines was obtained on an exchange basis from the South Australian Museum. The stone tools are interesting in that the aborigines even at the present day make use of the same techniques in fashioning them just as they were made during paleaolithic, mesolithic and neolithic ages.

Two specimens representing American Indian material culture together with a set of photographs to illustrate phases of American Indian life are being obtained from the Smithsonian Institution, U. S., National Museum in return for a pair of Madrasian palaeoliths.

An exchange is being arranged between this Museum and the Uganda Museum by which African ethnographic materials are to be obtained in return for Madrasian palaeoliths.

Archaeology.—The scheme of sending on loan to schools, original paintings belonging to the various traditional schools of India was continued during this year also.

Photographs added—Zoology.—(i) Twelve enlarged photographs illustrating important specimens of Indian Wild Life, purchased from Sri M. Krishnan, were added to the exhibited series of photographs in the General Gallery, (ii) about 24 photographs of various exhibits in the Bird and Mammal galleries of the Museum were freshly prepared and added to the Zoology Sectional Album and (iii) 2,200 coloured picture post cards illustrating each of the following six common birds of Madras were prepared and kept for sale to the public : Myna, Kingfisher, Woodpecker, Bee-eater, Oriole and Blue Jay or Indian Roller.

Botany.—Photographs of " Pollination in *Salvia* ", " Giant toadstool ", " Miniature handloom ", " Bamboo rhizomes ", and " Fancy hand-bag of leguminous seeds ", were added to the album.

Geology.—Photographs of " Giant Ammonite ", " Fossiliferous gondwana slab ", " ex-foliation and spheroidial weathering ", and " lower jaws of a fossil Siwalik ape ", were added to the album.

Anthropology.—Twenty half size negatives were added to the collection during the year. These include the Andhra coloured leather shadow play figures and art objects of the Khonds, Savaras, Moplahs and Oriyas.

Numismatics.—Fourteen quarter size photographs of the Metal casts coin box, medals and Swedish plate money were added.

Archaelogy.—At the beginning of the year the Curator undertook a tour to Pudukkottai.

Tours—Zoology.—(1) The Curator undertook the following tours in his capacity as Superintendent :—(*a*) To Hyderabad, in October 1958 to attend the meeting of the Central Advisory Board of Archaeology and to study the excavation sites at Nagariunakonda, (*b*) to New Delhi, in February 1959, to attend the third meeting of the Central Advisory Board of Museums. He also attended the annual meeting of the Museums Association of India and participated in the Seminar arranged by the Museums Association to discuss problems of Museum Display, and (*c*) to Ootacamund, in March 1959, to examine the coins and other antiquities among the personal effects of the late Lt. Col. Phythian Adams and to acquire such specimens as were worth acquiring for the Museum.

Archaelogy.—At the beginning of the year the Curator, undertook a tour to Pudukkottai to take charge of the coin collection of the Government Museum there from the Curator of the Museum on the eve of the latter's relief from duty when he proceeded on long leave. During this trip the Curator also visited Avadaiyar Koil to study the temple architecture and sculpture of that place. At the end of the year under report the Curator toured to Pudukkottai to hand over charge of the coin collection back to the Curator, Government Museum, Pudukkottai. During this time the Curator visited Tirumayyam and a few other places of archaeological interest close to Pudukkottai. Under special orders of Government, the Curator visited the Pullambadi canal excavation at Samyapuram near Trichinopoly to inspect the underground stone acqueduct by the engineering staff below 15 feet. As per the Government order the Curator inspected the area, which was the Southern capital of the Hoysalas of Mysore in the 14th century jointly with the Assistant Superintendent. Department of Archaeology, Southern Circle, of the Government of India and submitted a report on the nature and significance of the underground stone canal in the context of the relics of the fortification temples, inscriptions, etc., of the place. During this trip the Curator visited also Truvellarai to study the Pallava and early Chola temples and sculptures of the place After this, the Curator proceeded to Padmanabhapuram in the Kanyakumari District to check up the antiquities in the Museum there with lists furnished by the Government of Kerala. On his way back, the Curator visited Kanyakumari to study the Chola inscriptions in the Goddess temple at the place. The Curator undertook a tour to Bombay in order to accompany the exhibits loaned to the Government of India for exhibition at Essen in West Germany and hand them over to the representatives of the Government of India there. This opportunity was availed of by the Curator to see the famous cave temples at Elephanta and Kanheri near Bombay. The Curator along with the Superintendent, visited Chrompet for the purpose of inspecting the last two figures of the sculpture entitled " Triumph of Labour " by the famous sculptor Sri Devi Prasad Roy Chowdhury.

CHILDREN'S SECTION.

Four additions were made during the year report :, (1) a model illustrating the circulation of blood in the human body with a transparent plastic heart, (2) a spitz junior planetarium, (3) a satellite globe with two miniature motors—size 12 inches by 17 inches, and (4) an illuminated globe—size 12 inches by 16 inches.

RESTORATION AND PRESERVATION DONE IN THE CHEMICAL CONSERVATION SECTION.

During April 1958, the section was in the additional charge of the Assistant Superintendent. The present Curator took over from 1st May onwards.

This year nine bronze images, varying in size from 9 inches to 3½ feet were electrolytically cleaned and restored. As an experimental measure, in March 1959 fifty copper coins, placed in a copper receptacle, were lowered into the electrolyte and attached to the cathode. Constant brushing and washing of the coins has ensured that the cleaning is quick and safe. At the end of the year the treatment is nearly complete. Similarly four Swedish plate coins, which were first chemically treated, were later placed in one of the electrolytic cells. Their treatment is still going on.

A very large number of coins, however, have been treated this year. Of them 585, were of gold, 206 of silver, 191 of copper and 410 of lead. The weights of all these coins were also determined for purposes of record. In addition 157 gold, 2 silver, 50 billon and 13 copper coins were weighed accurately and their weights recorded. In their treatment, new chemicals and new methods were tried wherever possible. For instance the 410 lead coins were entirely cleaned with Amberlite IR—120 resin ; such a treatment has been remarkably successful. Experiments have been made extending this method to the treatment of copper coins and the initial results are encouraging.

The big panchamukha Vadyam exhibited in the Musical Instruments gallery developed on its surface two patches of greenish white salt incrustation. This occurred at the spots where, in repairing the Vadyam two copper pieces had been rivetted and soldered in place to cover up the metal lost by corrosion. Due to the conjunction of three dissimilar metals, the copper salt formation has been possibly hastened there. The big size of the Vadya precluded electrolytic treatment. So the patches of salt were gradually removed by chemical treatment. After thorough washing was done to ensure removal of all salt, the Vadyam was given a coating of celluloid.

A few iron objects from Adichanallur were chemically treated to remove rust and restored.

The State coach, which has been kept in the custody of the Museum was examined at the beginning of the year. It was found that the leather on the coach was getting dried up and if kept untreated, this would make the leather brittle and hard in course of time. To prevent it, the leather was cleaned and then coated twice with a 10 per cent solution of castor oil in rectified spirits. In giving the second coating 0.4 per cent paranitrolphenol was added to the solution to help prevent mould formation. The results of the treatment have been found to be satisfactory in the course of periodical checks carried out. Such parts of the reins as were made of iron and were rusty, were separately cleaned and finally coated with celluloid to prevent rust formation again.

A few discoloured labels were bleached for re-use. Three of the labels contained diagrams drawn in Indian ink and every care was taken to keep them intact while bleaching the paper and removing the discolouration.

Research and publications.—The possibility of extending the ion exchange method of cleaning lead coins as a general process of restoration for all metals, is being examined. The comparative merits of such a method are also being studied.

A short note on the treatment of bone and ivory was prepared and added to the chapter on chemical conservation in the " Handbook of Museum Technique " under print.

A comprehensive article on the work of this section, in its theoretical and practical aspects was written for inclusion in a forthcoming publication about the Museum.

Under the scheme of lectures for the benefit of College students arranged under the Second Five-Year Plan programme, three lectures on Chemical Conservaton were given. The subjects for the lectures were as follows : Scientific restoration and preservation of antiquities (1) Metals, (2) Organic materials and paintings, and (3) Siliceous and related materials.

ADMINISTRATION REPORT OF THE NATIONAL ART GALLERY, MADRAS.

During the year 1958–59, the total number of visitors to the gallery was 1,01,239 and the daily average number of visitors was 280. These figures being more than what they were for 1957–58, they indicated the growing popularity of the Gallery with the people.

The Special Committee for the Gallery met twice this year on 10th June 1958 and on 2nd March 1959. The Committee recommended the purchase of 6 paintings of which the purchase of 3 items had been effected and Government orders were awaited for effecting the purchase of the other three. The Committee, after having carefully gone into the question of exhibition of paintings in sloping show-cases, had decided against their use and recommended the use of slightly tapering vertical show-cases for the purpose. Arrangements were made for making a specimen show-case of this type.

Seven recently acquired paintings were displayed in the Gallery after removing a corresponding number of paintings which were on show for some time now, to the reserve collection.

The base planks of four show-cases in the main hall were replaced, and were also distempered afresh.

During this year colour reproductions in art cardboard of the two beautiful paintings namely, the Horse and the Sakuntala by Ravi Varma were prepared and put on sale.

A large number of distinguished people visited the Gallery. Among them were His Excellency Sri Bishnuram Medhi, the Governor of Madras, His Excellency the Ambassador of Yugoslavia in India. His Excellency the Ambassador of Austria in India, the Honourable Minister, Sri Senanayaka of Ceylon, the Chinese delegation of artists, Sri P. L. Varma, Member, Union Public Service Commission, Delhi. Sri P. C. Khanna, Member, Union Public Service Commission, Delhi. Mr. Granado, Minister of Labour, Trinidad, Mr. Kamaluddin Mohammed, Minister of Agriculture, Trinidad, Mr. Lothar P. Witteborg, American Museum of New York and Consultant, National Museum, Delhi, Mr. P. C. Sestieri, Archaeological Commissioner for Ceylon. Mr. Kenneth Bradley, Director, Commonwealth Institute, London and Sri Mortimer Wheeler, the eminent Archaeologist of International renown.

Below are reproduced the valuable remarks recorded in the Visitors' book by some of the distinguished visitors mentioned above, which show clearly the great merits of the exhibits particularly of bronzes, the beautiful manner they are displayed, the efficient service rendered in explaining the significance of the exhibits and above all the abiding interest of the Gallery for the general public who visit the gallery.

1. His Excellency Sri Bishnuram Medhi on 18th March 1959 " Pleased to go round and found everything arranged nicely. It has some of the most interesting relics ".

2. His Excellency the Ambassador of Yugoslavia on 12th January 1959. " We have been most impressed by the beautiful and fine way they are being presented to the public, simple, yet eloquent."

(Signed) S. T. SATYAMURTHI,
Superintendent.

National Art Gallery, Pantheon Road, Madras-8,
27th May 1959.

ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, PUDUKKOTTAI.

Extra-mural activities and assistance to educational institutions.—The regional Seminar conducted by the All-India Council for Secondary Education for the benefit of Headmasters, Headmistresses, and Inspecting Officers was held from Monday, 19th May 1958 to Monday 2nd June 1958, at the Government Training College in Pudukkottai. On the invitation of the Director of the Seminar the Curator visited the Seminar, and talked to the delegates on 22nd May 1958 from 10-30 a.m. to 12 noon on "Museum organisation and technique". The delegates visited the museum in the afternoon of the 21st May 1958. The Curator accompanied them in their excursion to Sittannavasal, Kudumiamalai and Kodumbalur, and acquainted them with the historical interest and archaeological importance of the places.

The Curator toured with the Curator for Archaeology, Government Museum, Madras in May 1958, to the sites containing loose and uncared for sculptures of interest and importance with a view to remove them to the museum.

Help was rendered in the exhibition staged in connection with the Centenary Celebrations of the Government Sri Brahadambal High School in Pudukkottai, and 101 interesting exhibits were lent from the museum for the purpose. Apart from the usual assistance to the educational institutions in and around Pudukkottai in giving talks on matters relating to Museums and scientific topics information was furnished for the preparation of a National Directory of Museums in India, and a brief note on the best "Art objects" displayed in the Museum was also given to the Museums Association of India in Bombay. A clear and concise account of the outstanding events in the Museum in 1958 was supplied to the Museums Association, London. Materials for the 'Indian Museums Quarterly' were regularly given to the Ministry of Scientific Research and Cultural Affairs, New Delhi.

Visitors.—One lakh forty-eight thousand and three hundred and eighty-two persons visited the Museum during the year. The daily average was 537, and the percentage of literate visitors was 42.

Eighty two educational institutions were benefited by their visit.

Last year (1957–58) the number of visitors was 146,339 and the daily average was 526. The percentage of literate visitors was 41. It is thus gratifying to observe that the museum is getting more popular and useful, and it is the centre of attraction to any visitor to Pudukkottai.

Distinguished visitors.—Persons of rank and scholars continued to visit the Museum, and among these who had visited it in the year were the Hon'ble Sri M. A. Manickavelu Naicker, Minister for Revenue, and the Hon'ble Sri V. Ramiah, Minister for Electricity to the Government of Madras.

Dr H. Goetz, former Director, Baroda Museum and Picture Gallery, the Curator, National Gallery of Modern Art, New Delhi, and the acting President, Museums Association of India were also among the notable visitors. Every one of the visitors has expressed high appreciation of the Museum.

Galleries, buildings and gardens.—There was a slight rearrangement of the galleries to improve their appearance. The inside of a few show-cases were painted with distinct colours to provide a natural background to the exhibits, and were also illuminated. Arresting bilingual labels, name-boards, charts and photographs were put up, and the display of the galleries was made very illuminating and interesting.

Buildings.—The special repairs sanctioned by Government for Rs. 7,500 and taken up as early as 25th February 1957, though they had been reported to have been finished by the Public Works Department have not improved the condition and appearance of the buildings. A second scheme providing for rectifying the defects noticed in the repairs executed will be prepared for an early sanction by Government, and due execution. The

improvement of the unseemly and unsuitable condition of the present buildings has been a desideratum which, the earlier the Government begin to execute the better it will be for a museum of the status and worth as the one in Pudukkottai.

A tiffin shed for the staff and visitors to the Museum sanctioned by Government was being taken up by the Public Works Department.

Gardens.—Nature was rather unkind this year to the garden by withholding rains for about eight months. They were, however, maintained, though with much difficulty, to add their due share of charm and interest to the museum.

WORK IN THE SECTIONS.

Geology.—A few unidentified minerals got from the Pudukkottai area were identified. The old and worn out labels were removed, and attempts were made to prepare bilingual labels.

Botany.—Attractive charts and interesting photograph were displayed in the wing on the " External morphology of Flowering plants ". A map of the Pudukkottai area showing its flora, and its distribution with special reference to the economic aspect will shortly be prepared, and displayed.

Zoology.—The notable additions to this section were in the Reptile gallery.

An Indian Python *Python molurus* measuring 8½ feet in length, and a Russell's or chain viper *Vipera russelii* 4½ feet in length, both found in the area were added to the existing collection of interesting snakes. A chart to distinguish a poisonous from a non-poisonous snake was put up.

The unfinished colour scheme and internal illumination of the show-cases attempted last year were carried on to a few more show-cases, and it is hoped to complete the venture next year.

Agriculture.—The section was attracting visitors from rural areas. Photographs and charts, illustrative of the different phases of South Indian Agriculture, and a campaign calendar of the fungus diseases on crops grown in the Madras State arranged with reference to the localities and seasons with the respective remedial measures displayed in the section was focusing the attention of the visitors. So were the charts on Agricultural Engineering, and the brief note in Tamil on " Grow More Food Campaign " to meet the ever growing population of the country.

Art and industries.—In the wing housing the " Cochin murals " depicting select scenes from Ramayana and Hindu mythology, labels in English and Tamil were put up.

The Gallery relating to the Textiles of Tiruvappur, a suburb of Pudukkottai, and to the woollen industry (" Cumbli " making) at Sellukudi, a hamlet, four miles from Pudukkottai was reorganised, and the exhibits were renewed and relabelled, and illustrated charts and photographs were duly displayed.

Anthropology.—Photographs of the megalithic sites in Pudukkottai area were prominently put up in the Pre-history Gallery exhibiting the potteries and their contents. The map of Pudukkottai and its environs showing the paleolithic and neolithic sites displayed in the section added its due share of importance and interest to the visitors.

Archaeology.—In the Epigraphy wing were put up charts showing the inscriptions in the area (Pudukkottai) arranged according to the scripts and the languages and dynasties.

A brief account of the palm-leaf gazetteer of the Pudukkottai State (a statistical account) compiled in 1813 A.D., and another of the Huzur records of Pudukkottai detailing with the correspondence between the Tondaiman Rulers of Pudukkottai and the East India Company, and Nawab Walajah throwing much interesting light on the history of the Pudukkottai State, and the British expansion in the far south were prepared in English, and exhibited by the side of the respective records. These offered valuable guidance to the student of the history of Indo-British relations in the Carnatic.

The colour scheme started and adopted last year to improve the background of the exhibits, and consequently their display, was successfully carried on to the stone and bronze galleries. The evolution of the Tamilnad, or Dravidian, Temple architecture as manifested in the several monuments in the area was shown by means of their photographs and plans. Brief and clear notes in English and Tamil were got up for the models of the cave temple at Sittannavasal, and the "Muvar Kovil" (Central shrine) at Kodumbalur. These will be extended to the other exhibits also in due course.

Numismatics.—The collection of 2,118 coins, comprising 980 gold, 280 silver, 42 lead, 8 nickel, 997 copper and 11 cupric alloys were checked, and rearranged with a view to prepare their catalogue. There were no additions.

Tours.—The Curator toured with Sri P. R. Srinivasan, Curator for Archaeology in the Madras Museum for six days in May 1958, to the sites containing ancient and loose sculptures with a view to bring them to the museum.

Research and Publications.—An article on "Archaeology in Pudukkottai territory and the Government Museum" was contributed to the "Souvenir" got up in connection with the centenary celebrations of the Government Sri Brahadambal High School, Pudukkottai. A brief note on the best "Art objects" in the Museum was furnished to the Secretary, National Museum of India, New Delhi.

The work on the "Sculptures of Kodumbalur"—10 cent. A.D. and the "Flora of the Pudukkottai territory" was progressing.

Government Museum, Pudukkottai,
31st May 1959.

(Signed) T. S. SUNDARAM.
Curator

ADMINISTRATION REPORT OF THE CONNEMARA PUBLIC LIBRARY.

EXCHANGES.

The number of institutions sending their journals in exchange for the Museum Bulletin was 167 and the number of different journals received from these institutions was 180. The number of standard works sent by them was 23. During the year under report the following four institutions were added to the Exchange list.

1. Society of Historical and Philospohical Sciences of R.P.R. Section of oriental studies, Counsel of Direction of the Society, Bucarst-1, Boulevard—V. Staline.

2. Escula De Billogia, Facultad De Cinecias, Universided Central De. Venezuels.

3. Museo Civico Di Storia Naturale Venezia, Italy.

No institution was removed from the Exchange list during this year.

Connemara Public Library, Madras,
31st May 1959.

(Signed) K. RAJAGOPALAN,
Librarian.

ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, MADRAS, THE NATIONAL ART GALLERY, MADRAS, THE GOVERNMENT MUSEUM, PUDUKKOTTAI, AND THE CONNEMARA PUBLIC LIBRARY (EXCHANGE SECTION), MADRAS, FOR THE YEAR 1959-60.

GOVERNMENT MUSEUM, MADRAS.

GENERAL.

Distinguished Visitors.—Among the distinguished visitors who visited the Museum and the National Art Gallery during the year under report were, the Chairman of the Legislative Council of Jammu and Kashmir, Dr. Edgar Schenck, Director of the Brooklyn Museum, members of the Press delegation from Sudan, Dr. Rudolph Salat, Director, Department of Cultural Activities UNESCO, delegates of UNESCO Regional Seminar on Book Production and Distribution, Dr. Konorski, Member of the Polish Academy of Sciences who was an invitee of the Government of India to the Indian Science Congress and Professor Paterna, Director of the Institute of German History at the Humboldt University, Berlin. All these distinguished visitors were received by the Superintendent and Curators and shown round the various galleries of the Museum and the National Art Gallery.

Museum Posters.—The scheme of putting up the Museum's publicity posters at important Railway stations all over India, bearing the caption, "Visit the Government Museum, Madras", was continued during the year under report.

Special Exhibitions.—In order to popularise new additions to the collections and other exhibits of special interest, the following special exhibitions were held at the entrance hall of the Museum during the year under report. These special exhibitions proved very popular with the visiting public as they provided a changing display in the entrance Hall almost every alternate month.

(1) Three unique Jaina bronzes acquired from Singanikuppam village, during July 1959.

(2) Original manuscripts of the late National poet, Sri Subramanya Bharati were exhibited during September 1959, in connection with the Bharathi Day celebrations.

(3) Ancient Chinese coins.

(4) An interesting series of brightly coloured marine shells of Japan obtained by exchange from the National Museum, Tokyo.

(5) Rayon from Bamboo.

(6) The story of Glass and its manufacture including special samples of foam glass, glass wool, signal glass, etc.

(7) Ancient American Indian Culture including specimens of hand-made pottery.

Due publicity was given to these special exhibitions in the local dailies through the Director of Information and Publicity.

Demonstrations to school teachers.—The annual Museum demonstrations were conducted for the benefit of teachers of the various local High schools in the various galleries of the Museum, in two batches during the months of November and December 1959, on Saturdays. About 45 teachers attended these demonstrations which enabled the teachers in their turn to guide their pupils round the galleries intelligently.

Loan of paintings to schools.—The circulating collections of paintings of the Tanjore, Mughal, Rajasthani, Kangra and Delhi schools of paintings, mostly of 18th and 19th centuries were received back from the various schools in the State after having been exhibited in these schools for over six months. A fresh list of schools has been called for from the Director of Public Instruction for re-circulating the paintings.

Audio-visual aids.—The sale of picture post cards of bronze images, and of common birds of Madras, sets of electroplated metal casts of coins illustrating the history of Indian coinage, and miniature bronze replicas of the world famous Natesa from Thiruvelangadu (exhibited in National Art Gallery) were continued during the year as part of the Museum's audio-visual programme. These have proved to be immensely popular especially among schools and small museums in the country. The sale of photographs of important exhibits in the Archaeological galleries was also continued during the year.

Museum Technique Training Course for teachers.—Under the training programme of the education department included in the second Five-Year Plan two batches of school teachers were given intensive training in Museum techniques during the year under review.

Special Lectures to College students and others.—According to a programme of educational services drawn up under the Second Five-Year Plan, a series of twenty lectures on various selected topics related to the fields represented in the Museum were delivered by the Superintendent, Assistant Superintendent and each of the five Curators for the benefit of College and University students during August 1959. The lectures were illustrated by specially made lantern sides and proved to be quite popular.

Museum Committee.—The Superintendent convened a meeting of the Museum Committee at the Secretariat on 21—10—1959.

Special Committee of the National Art Gallery.—Two meetings of the Special Committee of the National Art Gallery were convened during the year to consider matters relating to the Art Gallery including selection and purchase of Art objects.

Notable additions to the collections of the Museum.—A bronze Parvati (Tribanga pose) from Sendangudi village, Thanjavur, a Somaskanda group from Avedayarkoil, Thanjavur and a Mahishasuramardini in stone from Mayuram are the notable additions to the scupltures. A Veerapandiya copper plate grant is yet another valuable acquisition. In addition to a number of original paintings received as donations this year, a few very impressive murals have been added to the galleries. One of them depicts the scene in which Sundaramorthi Nayanar and Cheraman Permanayanar go to Kailas. The other depicts Vipranarayanar worshipping at the temple at Srirangam. At the same time in pursuance of the Museum scheme of copying out ancient murals in South Indian temples which are fast deteriorating four murals have been copied and added to the collection. Two of these are from the Siva temple at Chidambaram and belongs to late Chola period while the other two are from the Vishnu Temple of Srirangam belonging to the Nayak period. A tree of evolution showing the main lines of evolution in the animal kingdom was a notable addition to the Zoological Galleries.

Donations received.—Among the donations received this year for this Museum are six South Indian Paintings, two Mother-of-pearl inlay on wooden panels from Indo-China and one bronze from Indo-China *from Sri T. N. Sethurama Chettiar of Pondicherry.* A painting of Queen of Sheba's visit to Solomon's Court was presented by Rajkumar R. Chidambaranatha Durai of Ramanathapuram. Another painting of Jesus at the Garden was presented by Sri Justice M. Ananthanarayanan, I.C.S., High Court of Judicature, Madras.

Reorganisation and development of the Galleries with Central Financial Assistance.—With the help of a grant of Rs. 50,000 from the Government of India towards equipment, special built-in modernised cases with concealed fluorescent lighting were fitted up in the Bird, Economic Botany and Ethnology Galleries. Fourteen new cases were also made for the Children's Gallery and four cases in the National Art Gallery were remodelled and modernised so as to improve the display and lighting.

Construction of an additional block for the Chemical Laboratory.—The construction of a two-storeyed extension to the existing Chemical Laboratory was also commenced during the year with the aid of Central Financial Assistance and the work is in progress.

Murals for the Galleries.—Four large Murals, two of them measuring 9 feet × 12 feet each, and the other two 8 feet × 12 feet each were prepared at a cost of nearly Rs. 5,000 and displayed in the Galleries in pursuance of a scheme for beautifying the galleries.

Copying of Murals from temples.—Two wall paintings from the Chidambaram temple and two from Srirangam temple were copied during the year, for display in the picture gallery.

Publications.—The following publications of this Museum were printed and released for sale to the public during the year under report :—

(1) Coins of India through the ages.

(2) Select Satavahana coins by Dr. M. Rama Rao.

(3) Beginnings of the traditions of South Indian Temple Architecture by Sri P. R. Srinivasan

(4) Guide to the snakes exhibited in the Reptile gallery of the Madras Government Museum by Dr. S. T. Satyamurti.

(5) Amphipoda of the Madras coast by Sri Nagappan Nair.

Besides, the Superintendent published the following papers during the year under report :—

(1) "Special effects in Dioramic display" in the Journal of Indian Museums.

(2) "A record of the Pearl Oyster *Pteria lotorium* off Tuticorin" in the Journal of the Zoological Society of India.

The Handbook of Museum Technique, edited by the Superintendent was in the final stages of its printing at the end of the current year.

Plans of the Galleries at the entrances.—Four sign-boards indicating the lay out of the various galleries were painted and put up, two at the entrance to the New Extension, and two at the entrance to the front building to help visitors in finding their way about in the galleries.

Display of Picture Postcards available for sale.—Two large new wall cases were made and fixed up at the entrance to the galleries in the front building, and picture postcards, photographs, etc., available for sale at the Museum have been displayed in this case to promote their sale.

Sale of Tourist Literature.—A selected series of booklets issued by the Government of India Tourist Department are being kept for sale to the visiting public at the sales counter of the Museum along with the Museum publications.

Documentary Film on Prominent Museums of India.—The representatives of the Films Division of the Government of India were afforded all necessary facilities for taking cine photographs of some of the highlights in the Archaeological galleries and the National Art Gallery in connection with the preparation of a full length Documentary on the important Museums of India.

Facilities to Scholars and Research workers.—As usual, all necessary facilities were extended to scholars and research workers in studying the museum material in the several sections. Special mention should be made of Dr. Stella Kramrisch, Professor of Indology at the University of Pennsylvania, U.S.A., and Sri C. Sivaramamurthi, Keeper of the National Museum, Delhi, who were supplied with several photographs for research, study and publication purposes.

Centenary Exhibition Hall.—The following exhibitions and meetings were held at the Hall during the year under report :—

Serial number and by whom reserved.	Period of engagement.	Purpose for which reserved.
(1)	(2)	(3)
1 Kerala Arts Centre	14th April 1959—One day.	Meeting.
2 South Indian Society of Painters.	31st April 1959 to 10th May 1959—Eleven days.	Exhibition.

Serial number and by whom reserved.	Period of engagement.	Purpose for which reserved.
(1)	(2)	(3)
Sri C. J. Jayadev	19th June 1959—One day.	Engagement.
4 Johnson Lee	23rd June 1959 to 29th June 1959—Seven days.	Exhibition.
5 Suris Arts	3rd July 1959 to 11th July 1959—Nine days.	Exhibition.
6 Lalit Kala Academy	12th July 1959 to 29th July 1959—Eighteen days.	Exhibition.
7 C. J. Jayadev	21st August 1959 to 23rd August 1959—Three days.	Engagement.
8 South Indian Society of Painters.	22nd October 1959 to 5th November 1959—Fifteen days.	Exhibition.
9 Progressive Painters' Association.	14th November 1959 to 29th November 1959—Sixteen days.	Exhibition.
10 South Indian Society of Painters.	25th December 1959 to 9th January 1960—Sixteen days.	Exhibition.
11 United States Information Service.	10th March 1960 to 21st March 1960—Twelve days.	Exhibition.
12 Association of Young Painters and Sculptors.	22nd March 1960 to 31st March 1960—Ten days.	Exhibition.

ZOOLOGY.

Additions to the collections.—One skull of the Bonnet monkey *macca radiata*, one specimen of Macaw parrot, *Ara* sp. from the Madras Zoo, a collection of thirty-eight different species of marine shells from Japan, obtained through exchange from the National Museum, Tokyo, two skeletons of the domestic cat, a collection of forty bird skins collected by the Superintendent during his tour to Pudukkottai, three specimens of Sea horse *Hippocampus* sp., one specimen of Indian *Gazelle*, *Gazella benneti*, one scorpion with five young ones, a green whip snake *Dryophis nasutus*, a beetle, *Batocera rubra*, and a collection of fifty-two bird skins, three mammal skins, a good number of shells, crabs, lobsters, cephalopods, jelly fish, millipedes, grasshoppers, and butterflies collected by the Curator during his tour to Kanyakumari district were newly added to the collections.

Work in the Galleries—Additions to the galleries.—One specimen of Macaw parrot (*Ara* sp.) and specimen of Ostrich, *Sturthio camelus*, were exhibited in the Foreign animals gallery. In the Bird gallery one specimen of the Blue Jay *Coracias bengalensis*, one specimen of the Rock horned Owl, *Bubo bengalensis*, one specimen of the Pied Kingfisher *Ceyle rudis*, one specimen of the common kingfisher *Alcedo atthis* and one specimen of Ashy Swallow shrike *Artamus fuscus*, were newly exhibited. A collection of thirty-eight specimens of marine shells from Japan were exhibited in the higher Invertebrate gallery. The Indian Gazelle, *Gazella benneti* was newly added to the Mammal gallery. A large Tree of Evolution, composed of coloured cut out figures of all groups of the Animal kingdom and exhibited in a newly made show case was a most notable addition.

Improvements to the galleries (also repairs and renovations).—Five birds in the Bird gallery were renovated. The specimen of the Hornbill, the neck of which was inclining badly to one side was throughly repaired, renovated and re-exhibited in the Bird gallery. The skull of the sperm whale was painted with picture varnish. The specimen of Hyaena

was renovated and re-exhibited in the Mammal gallery. A specimen of fish in the Fish gallery was renovated and replaced. The elephant tusk mirror stand was polished with silver polish and made bright. The fur of the Indian Sloth bear, *Melursus ursinus*, was treated with hair dye and re-exhibited after renovation. A few skeletons in the Rodentia case and a few entire exposed skeletons in the Mammal gallery were renovated. Some of the distribution maps in the different galleries were re-touched with suitable colours and replaced. The floor of the higher Invertebrate gallery was repaired and the specimens re-arranged. Modernised built-in show cases were constructed in one section of the Bird gallery.

Labelling.—Many of the moth eaten labels in the coral boxes from the gallery reserve collection were replaced by newly written labels. A new label (both in English and Tamil) was written and fixed up for the Mural painting in the Bird gallery. In the Butterfly reserve collection drawers in the Students' room, some of the old labels were replaced by new labels indicating changes in the names. An old descriptive label of the coral reef was replaced by a new descriptive label. About 25 faded labels in the Crustacea reserve collection were replaced by new labels. Three old labels in the case containing beaks of birds were replaced by new labels after making necessary corrections in the names. About twenty-five Tamil labels were newly written and placed in the Fish gallery.

Preservation of reserve collections.—The reserve collection drawers in the Coral gallery were sprayed with D.D.T. and provided with naphthalene. The Insect cabinet drawers kept in the entrance to the Invertebrate gallery and in the Students' room were cleaned and provided with the necessary preservatives.

The specimen jars in the almirahs containing Reptlies, Crustacea, Mollusca, Insects and miscellaneous collections were replenished with spirit.

Research.—The Curator started research on Myriapoda, but finding it difficult to obtain the necessary literature, discontinued the study and took up a study of the Acrididae (Orthoptera). The Superintendent continued his research work on the Lepidoptera of South India.

Publications.—The bulletin entitled Amphipoda of the Madras Coast by Sri Nagappan Nair, M SC., was published in December 1959. The Guide to the snakes exhibited in the Reptile gallery by Dr. S. T. Satyamurti was published in March 1960.

Special Exhibition.—A speccial exhibition of the Marine shells from Japan was arranged in the month of October 1959.

Lectures.—The Curator delivered a talk on the preservation of animals to teachers from the Teachers' College, Saidapet. The Curator also conducted lectures and practical classes to two batches of teachers who attended the Museum Technique Course. The Superintendent delivered three lectures to college students. The Curator also delivered a series of three lectures on Zoological topics to college students. The Superintendent inaugurated the Museum Semiriar at St. Christopher's Training College. The Curator, Zoological section, delivered a lecture on wet preservation, fish preservation and egg preservation at St. Christopher's Training College. The Curator conducted the usual Museum demonstrations to teachers in the Zoological galleries in two batches.

Facilities to research workers.—Training in taxidermy was given to a local student Sri Jayant Kamdar and to Sri Mohammed Azeez from Jamal Mohammed College, Tiruchirappalli. The Curator, Government Agricultural College, Coimbatore, was also given training in Taxidermy.

The Curator identified six specimens of corals for the Director, Zoological Survey of India. Mr. Ramamurthy, Demonstrator, Loyola College, was shown the ear wig collection which he wanted to examine for his research work. Seventy-four shells were identified by the Curator and the Superintendent for Mr. P. V. Cherian, Research Scholar, Thavara, Ernakulam. Information regarding the distribution of Sepiolidae was given to Dr. S. Jones, Chief Research Officer, Mandapam Camp. Facilities were given to Sri Victor Gladstone for identifying four snakes brought by him.

Sri Narayanaswamy Iyer was given information on the Tamil names of mammals and birds.

Photographs added.—The following photographs were added to the album during the year under report to make it more representative :—

(1) A general view of the foreign animals gallery.

(2) Six photographs of reptiles.

(3) One photograph of the Indian sloth bear.

(4) The Indian tiger (side view).

(5) Head of the Indian tiger.

(6) Dugong.

(7) Evolutionary tree.

(8) The Indian Gazelle, *Gazella gazella benneti*.

(9) Seven photographs of the Curator's tour to Kanyakumari district.

(10) Two views of the grasshopper, *Teratodes monticollis*.

(11) Two views of the grasshopper, *Choroedocas capensis*.

BOTANY.

Additions to the collections.—Six specimens illustrative of the cork industry were procured as gifts from Sri G. B. Doraiswamy, Cork Industries Factory, Alandur, Madras. Fifteen picture post-cards of wild flowers of Australia were obtained in exchange for picture post-cards of birds and Art objects of this Museum. Two "Mural" paintings on canvas, one depicting the giant water lily (*Victoria regia*), and the other depicting fossil plants (restored to life) were procured for the Botany galleries.

Work in the galleries—Additions to the galleries.—Five photographs of *Ricinus comunis*, *Allium cepa*, *Strychnos nux-vomica*, *Papavar somniferum* and *Linum usitatissimum* were added to the vegetable oil group, and specimens of roots of *Abrus precatorius* were added to the medicinal products group; and a collection of 14 specimens of timber from Wales were added to the timber collections, in the Economic Products galleries.

Improvements to the galleries.—The lining cloth in three sloping show cases containing "fibres", "brushes" and "tobacco", and in one centre show case containing the oil press model was renewed in the Economic Products galleries. The sloping show case containing the Ganja plants was specially treated and rendered insect-proof. One wall-case containing the relief model of India was varnished. The work of modernising the Economic Products galleries was taken up in the year under review.

Labelling and preservation.—The old exhibit of *Amphiroe anceps* in the Ecology galleries was renovoted. Five exhibits of herbarium specimens were re-poisoned. Three photographs relating to the Betelnut series were neatly mounted. Fourteen herbarium specimens in the Systematic Botany galleries, were re-mounted and displayed better. The exhibit of Ganja plant in the Economic Products galleries was provided with a permanent label. Thirteen new labels were prepared including three newly-painted ones. Forty labels were printed for the Economic Products galleries. One specimen of *Amphiroe anceps* in the Ecology galleries, and one specimen of timber of *Pithecolobrium saman* in the reserve collections were provided with fresh labels. Index cards were prepared for 100 exhibits.

Research.—The Curator's research on ferns came almost to a standstill on account of increase in several other items of work which had to be given urgent attention.

Publications.—An F.A.O. publication, "Weed control" by Lee Ling was acquired on an exchange basis and added to the Sectional Library. Proof-sheets of the Handbook of Museum Technique were corrected.

Lectures.—A lecture on preservation of botanical objects was delivered to a batch of students of the Teachers' College, Saidapet. Classes on museum technique were conducted for the benefit of two batches of high school teachers. Lectures on "Love of Flowers", "Landscape gardening" and "Plant surgery" were delivered to the college students in the city. Demonstration lectures in the public galleries, were delivered to one batch of high school teachers. Training in botanical museum methods was given to the Curator, Agricultural College Museum, Coimbatore.

Facilities to research workers and others.—A photograph of "Ficus embracing Borassus" was supplied to Sri K. S. Srinivasan, Curator, Industrial Section, Indian Museum, Calcutta. Dr. B. G. L. Swamy, Chief Professor of Botany, Presidency College, Madras, was supplied with specimens of timbers of *Anogeissus latifolia, Tectona grandis, Acacla melanoxylon, Pterocarpus marsupium, Chiclerassia tabularia, Dillenia pentagyna, Bassis latifolia, Terminalia tomento, Acacia aracia arabica, Hardwickia binata Pleurostyna wightri and Xylia delabriformis.* Historical data relating to *Shorea robusta* were furnished to Sri Daya Munasinghe of the Rubber Research Institute of Ceylon, at his request.

Photographs added.—Thirty magic lantern slides in black and white, relating to a varety of subjects, were prepared. A view of the old arrangement of show cases, etc., in the Economic Products galleries, and another of the new modernised show cases under construction were photographed for future references.

Geology.

Additions to the collections (including reserve).—A small lump of crystals of Borax was procured from Sri N. N. Mallya, I.A.S., Wellesely Road, New Delhi, in exchange for uncut, semi-cut and cut specimens of carnelians. A sample Thorium mantle with an asbestos thread was procured from Sri R. Subramaniam of the Science Museum, National Physical Laboratory, New Delhi, in exchange for Biotite Mica.

Work in the galleries—Additions to the galleries.—Two mural paintings on canvas one depicting a lunar landscape and the other a comet at down were prominently fixed up on the walls in the gallery. A sample of Anatase grade powder of Titanium dioxide, was added to the exhibits in the Economic Geology gallery. Two specimens of fossil Bennethitalean leaves were the new additions in the Stratigraphy section of the gallery.

Improvements to the galleries.—The Geology galleries were completely reorganised, rearranged and given a modern look. The lining cloth in six sloping cases was renewed. The interior of all the vertical show cases were distempered or varnished according to the needs. The exterior of all the show cases including wall-frames were varnished. Five exhibits of photographic enlargements relating to "Earth from 100 miles up", "Basaltic columns and cross joints", "The Valley of the Nilang River", "The Indus Gorge at the Kalabagh Hills", and "Rocks split by plant roots", were renewed. The lighting problem in the Geology galleries was intently studied and a new scheme was prepared.

Labelling and preservation.—Two individual labels for the fossils of Bennethitalean leaf, one for the fluorescene exhibit and seven for the minerals with radio-active elements were prepared. The exhibits of "hornblende rock", "mica-mining", and "fluorescence" were provided with neatly paintd index labels. Thirty old painted index labels on the different show cases were neatly touched up.

Publications.—"The World we live in", an attractive, popular and very useful scientific book by Lincoln Barnett and the Editorial staff of Life, was purchased and added to the Sectional Library. Proof-sheets of the Handbook of Musum Technique were corrected.

Lectures.—A lecture on the preservation of geological objects, was delivered to a batch of students of the Teachers' College, Saidapet. Classes on Museum Technique were conducted for the benefit of two batches of high school teachers.

ANTHROPOLOGY.

Additions to the collections.—A pair of Sioux Indian moccasions of soft leather with ornamental bead-work of very fine geometrical patterns in a colour scheme, a Cheyenne Indian pouch of bead-work on soft leather with metallic bead tassels and 22 photographs of plains and South American Indians were obtained from Dr. F. M. Setzler, Smithisonia Institution, United State National Museum, Washington, on an exchange basis in return for two Madrasian palæolthis.

A set of 28 Andhra coloured leather shadow play figures representing characters from the Ramayana, Mahabharata, and other folk dramas was acquired by purchase from Sri Koduru Ramamurti, Artist, Madras-10.

A collection of 16 stone tools and 17 pottery specimens of the Neolithic of Japan, was obtained on an exchange basis from Prof. S. Sugihara, Profe sor of Archaeological Institute, Meiji University, Tokyo, Japan, in return for which collection, a collection of Madrasian palæoliths and some South Indian miccoliths is being sent.

A collection of Ethnographic materials of the tribes of East Africa was obtained from Dr. M. Posnanskay, Curator, Uganda Museum, Kampala, on exchange basis in return for a collection of 24 palæoliths of the Madrasian facies.

An ornamental carved wooden club of the Todas and a Kota bamboo flute were presented to the Museum by Sri K. J. Somasundaram, I.A.S., Collector of the Nilgiris district.

A carved wooden grave post of the Korku tribe was obtained by exchange from Sri S. C. Dube, Saugar University.

A collection of six South Indian wooden boomerangs, 18 iron boomerangs, a pair of brass boomerangs, a cross bow and three arrows from Assam, two wooden Bommalattam figures, three South Indian swords, two battle axes, a spike, and a small number of ornaments (*Kal Silambu, Vira Kazhel, Kal Thandai, Kal Golusu, Kai Modiyal, Tolkappu, Kaikappa, Vagu Valayam*) were obtained by purchase from Sri Organti Kanakayya Naidu. Mirasdar, Sivakasi.

Work in the galleries—Additions to the galleries.—Consequent on the renovation of the six exhibit cases in the Mohenjo Daro Gallery by cloth lining and painting the interior of the cases, copper and stone tools, terracottas, beads, shell objects and painted pottery from the reserve collection have been added to the exhibits already on display.

Improvements to the galleries (including repairs and renovations).—Six exhibit cases in the Mohenjo Daro Gallery were renovated by cloth lining of the interior and varnishing the cases.

The Kathakali figures which were htherto exposed were enclosed in a glass-fronted case, with a rear door and in conealed artificial illumination. This has been constructed by the Government Wood Working Unit as part of a scheme of modernising the galleries from a grant from the Government of India.

Labelling.—Thirty labels and a map were renewed in the prehistoric antiquities and ethnology galleries.

Preservation of Reserve collections.—The routine preservation of the reserve collections of the prehistoric antiquities and ethnographic materials of the Museum was carried out this year as usual. Among this was the new set of 28 Andhra coloured leather shadow play figures which were given the Castor oil-spirit preservative treatment

and stored. Wax and turpentine treatment was given to such of the ethnographic collection as were found to be in need of such preservative treatment. The reserve collection of Mohenjo Daro antiquities were cleaned and stored after exhibiting some of them as were required for the renovated gallery cases. The routine cleaning, dusting and replenishing of reserve collection material with naphthalene was carried out this year as usual.

Research.—The Curator's papers on the Tribes of Attapady and the Tali Rite are being prepared for the press.

Publications.—The Curator has contributed three articles (1) General Anthropology (2) Prehistory and (3) Human Biology to the Telugu Encylopædia.

Special Exhibition—Early American-Indian culture.—The Government Museum, Madras, is noted for one of the world's largest collections of pre-historic antiquities—the Bruce Foote collection, representing the stone, bronze and iron ages of India. This collection has been added to from time to time by exchange with Indian and foreign museums. As a result, the museum has built up a large number of collections characteristic to the stone ages of England, France, Egypt, South Africa, Malaya, Indonesia, China, Japan and the United States of America.

A special exhibition of some selected antiquities to represent Early American Indian culture was held at this Museum from 5th March 1960 for six weeks. There is already an exhibit illustrating American Indian Culture in the Ethnology Gallery of this museum illustrating such peoples as the Eskimo, the Kwakiutil, Haida and Sioux Indians. The present exhibit is part of a large collection of antiques representing the prehistory of the United States of America obtained from the Peabody Museum of Harvard University by exchange.

The stone age tools exhibited represent the material culture of the food gathering, collecting and hunting peoples of the early stone age of North America. Grinding and hammering stones are distinctive of the food-gathering peoples while hunters have stone points for arrows, javelins and spears, stone knives and blades. The stone scrapers, bone awls and needles are associated with working hides and skins. Bone tubes and beads served as ornaments. The grinding and polishing technique of stone tool making followed the earlier chipping and flaking modes. These include stone axes, adzes chisels, milling stone, pestles and mortars of the late stone age peoples. Pottery which is a characteristic feature of argricultural people is entirely hand-made. Here the pottery specimens exhibited include earlier coarse unpainted wares of the Temple Mounds and the later painted Pueblo pottery of which several periods are recognised. The peublo pottery have decorations of geometrical designs.

Lectures.—Sri C. J. Jayadev, Assistant Superintendent, Government Museum, Madras, gave a lecture on Anthropology and methods of preservation of Anthropological specimens to the delegates and science graduates of the Extension services of the Teachers' College, Saidapet, on 5th May 1959.

Sri C. J. Jayadev, Assistant Superintendent, Government Museum, gave a series of three lectures: (1) Megaliths of South India, (2) Tribes of the Attapady Hills and (3) Funerary Rituals in South India. This series was part of a Government-sponsored scheme of lectures for the benefit of University students.

Sri C. J. Jayadev, Assistan Superintendent, Government Museum, gave a course of three lectures on Primitive material culture to the students undergoing the Certificate and Diploma courses in Anthropology of the University of Madras. The lectures were illustrated by demonstrations and practical classes during which the students were afforded facilities for the examination and study of the ethnographical collections on exhibition and in reserve of this Museum.

Sri C. J. Jayadev, Assistant Superintendent, Government Museum, have a course of nine lectures of Pre-historic Archæology and Physical Anthropology to the students undergoing the diploma course in anthropology of the University of Madras. The lectures were illustrated by demonstrations and practical classes during which the students were afforded facilities for studying the pre-historic antiquities collections of the Museum and were given training in practical anthropometry.

Facilities to research workers and others.—The following research scholars and students were afforded facilities for research on the pre-historic antiquities and ethnographic collections of this Museum :—

Prof. T. Balakrishna Nayar, Principal, Presidency College, Prof. B. G. L. Swami, Professor of Botany, Presidency College, Mr. M. V. Aung, Burmese Scholar deputed by the Director-General of Archæology in India, Mr. S. R. Rao of the Archæological Department of India, Dr. A. P. Khatri, Anthropologist on the Council of Scientific and Industrial Research, New Delhi and Dr. M. Seshadri, Professor of Indology, Mysore University, and Director of Archæology, Mysore State.

Photographs added.—A set of 20 enlargements of tribal subjects on anodised aluminium plates were made for gallery exhibition in the Ethnology Gallery.

NUMISMATICS.

New additions to the collections.—Sixty-five gold coins were found in the Chinnagamannur village, Dharmapuri taluk, Salem district. Out of these sixty-five, ten coins —which are Panams of Tipu Sultan of Mysore were acquired for our coin cabinet. Forty-five gold coins—old star pagodas of the English East India Company—one of them a broken half piece and the rest full coins found in Thimmarajampet village, Kancheepuram taluk, Chingleput district, were also added to the collection. From Tirumanjeri, Mayuram taluk, Thanjavur district, a single gold coin was found. This coin, an one-third mohur of the English East India Company, was also acquired.

Other additions to the collection include 50 Indo-British silver rupees which were found at Tiruramieswaram village, Mannargudi taluk, Thanjavur district.

Two hundred and three copper coins—Pandya, South Indian, Ceylon, Indo-British and Vijayanagar—were added by purchase.

Other notable additions to the collections.—Subedar C. J. Jeyaraman of A.S.G. records (M.T.), Aurangabad Contonment has presented this Museum with a collection of 75 foreign and Indian copper, nickel, cupro-nickel coins, etc. This collection includes coins of the Cholas, coins of foreign countries like Britain, U.S.A., Italy, Indo-Australia, Syria, etc.

Work in the section.—The work of transfering items pending for more than ten years was attended to and completed. The curator also attended to the work of identifying and classifying a few copper items pending transfer from the old items. Nearly 250 coins, gold and silver were weighed before August 1959 and entries were made in the registers concerned as suggested by the Collector of Madras in his previous Annual Inspection Report.

The Curator is continuing the work of identifying and classifying and weighing of pre-1932 stock of copper coins. About 300 coins were identified and classified.

During the period under review, ten treasure trove hoards of coins found in the Madras State were examined and out of them five hoards, some of them as a whole and some in parts were recommended for acquisition for the Madras Museum coin cabinet and acquired. Five private collections of coins were examined and two collections of copper coins, one of Pandya and the other South Indian coins, etc., and a collection of Vijayanagar copper coins were purchased for the Museum. The addition of these coins to the existing stock, has made the Vijayanagar coin collections, a fairly representative one of the famous Vijayanagar monarchs.

The Curator worked out during the period under review, a detailed plan for the proposed Numismatic gallery, with an explanatory note on the arrangement of the proposed gallery, the display of coins, etc. The plans are to be laid before the Museum Committee for consideration. In this connection, a detailed estimate has also been worked out for submitting before the Committee.

The Curator is continuing her research work on Puranas or Punch-marked coins with a view to bringing out her thesis entitled " Madras Museum collection of Punch-marked coins as a Museum bulletin.

The State coach and its accessories are maintained in good condition.

Publications.—The monograph on the Select Satavahana coins in the Madras Museum by Prof. M. Rama Rao was published as a Museum Bulletin during the year.

Educational work.—A special exhibition was organised in July 1959 and specimens of Chinese primitive coins, the spade, key and knife coins were exhibited for a fortnight.

Two lectures, one on " Primitive money " and another on Kushan coinage were delivered to College students during August 1955 under the Second Five-Year Plan programme. Lectures were also delivered on Numismatics, with suitable demonstrations, to two batches of trainees who attended the Museum Technique Course.

Facilities to research workers and others.—Mr. R. H. Wood of the U.S.A. Army was given the facilities to study the Kushan and Roman coins in our collection. Mr. K. D. Swaminathan of the Archæological Survey Department, Southern Circle, was shown a few coins of the Vijayanagar rulers. As usual information on Indian coins was given to scholars both Indian and foreign. Coin collections of private individuals were identified. Gold and silver coins of the Sultans of Malwa and Gujarat were identified for Mr. S. T. Sreenivasagopalachari, and copper Vijayanagar and Maratha coins for Mr. K. D. Swaminathan of the Archæological Survey Department. A collection of foreign and East India Company copper coins was identified for one Mr. S. Vijayarangam of the Southern Railways. More than a thousand silver and copper coins and a few ancient Indian coins which belong to Mr. J. W. H. Knott, Manager, Connema Hotel, were studied and ancient coins in the lot were separated as antiquities.

Photographs added.—Thirty half size prints of Chinese primitive money, primitive money of Polynesia, and Gupta coins of Bharat Kala Bhavan, Benares and six quarter size prints of a few Punch-marked coins of the Mambalam and Bimlipatam hoards and of the Metal casts coin box were added.

Six photographs entitled " The story of Indian coins " of 10 inches by 12 inches size were purchased from the National Museum, New Delhi, for exhibition purposes.

ARCHÆOLOGY.

General—Copying of Murals.—On the advice of the Museum Committee the Government approved the scheme of copying ancient wall paintings from the temples of Tamilnad. The Nataraja temple of Chidambaram and Ranganatha temple of Sri Rangam were selected for the purpose and two panels from each of these temples were copied during the year under report. The Chidambaram murals depict Siva and Vishnu conferring at Kailas, Vishnu as Mohini and Siva as Bhikshatana. The paintings of Chidambaram represent the later Chola period. Paintings from Sri Ranganatha temple, belong to the Nayak period, depicting Vishnu giving Darsan to his devotees. The copying of ancient paintings is a welcome move, since most of the paintings are in a bad state of preservation.

Replicas of Tiruvelangadu Natesa.—Fifty miniature replicas of the world famous Tiruvelangadu Natesa in bronze have been prepared during this year. The replica which is about one foot in height, has been specially prepared to meet the demands of the visitors tourists and art lovers both from India and abroad. The miniature models are priced at Rs 200 each and are offered for sale at the Government Museum.

Preparation of paintings.—In pursuance of the scheme of beautifying the various galleries of the Museum with murals, two paintings, one depicting Sundaramurthi Nayanar visiting Kailas with Cheraman Perumal and the other Tondaradi Podi Alvar worshipping at Sri Rangam temple were prepared. The painting representing Sundaramurthi's visit is modelled on the famous painting at the great temple at Thanjavur.

Notable additions to the collections.—The elegant image of Parvati in bronze from Sendangudi village of Thanjavur district and Srinivasa image from Kayathur village and Somaskanda group from Auvadayarkoil, are the most notable bronzes, received as treasure trove finds during the year under review. Amongst the stone sculptures, the Mahishasuramardini received from Mayuram and the captivating Veerabhadra, transferred from Thanjavur Art Gallery are the most important acquisitions. The copper plate grant of Sri Veera Pandya which throws much welcome light on the Pandyan History, is a noteworthy addition.

Donations received.—Sri T. N. Sethurama Chettiar, the Deputy Mayor of Pondicherry, who, in the past has helped this Museum with many donations has again come forward with a donation of 6 South Indian paintings during the year under report. He has also presented two mother-of-pearl inlay works of Indo-China and a bronze statuette of Indio-China. Two other paintings were also received as gifts. One amongst them depicts the Queen of Shebha's visit to King Solomon, presented by Rajkumar R. Chidambaranatha Durai of Ramanathapuram Palace. The other was presented by Mr. Justice M. Ananthanarayanan, I.C.S., depicting Jesus in the Garden.

Exchanges.—Seven Indo-Chinese bronzes and one miniature spear stand containing weapons were obtained by exchange from Sri T. N. Sethurama Chettiar, Deputy Mayor of Pondicherry, in return for five duplicate wood carvings of this Museum.

Special Exhibitions.—Three jain bronzes and the manuscripts of Amarakavi Bharati were kept as special exhibits during the period under report.

Additions to the collections.—A total of hundred and eleven articles, consisting of ten bronzes, seventeen stone sculptures, two copper plate grants, forty-two paintings and forty miscellaneous articles were acquired during the year under review, by way of treasure trove finds, purchases, gifts and exchange. Out of seventeen articles received as treasure trove finds ten are bronzes and the rest of the seven are miscellaneous articles as basins, plates, etc.

Bronzes.—Amongst the bronzes, the elegant image of Parvati standing on a pita in the Tribanga pose, received from Sendangudi village is very interesting. The Srinivasa image from Kayathur village is an interesting image, though cast in the conventional style. This resembles Srinivasa of the Catalogue of Hindu metal Images of Madras Museum and reminds us of fourteenth century art. Vandalism had resulted in the mutilation of the head, hands and legs of the image of a Nataraja when it was received as a treasure trove find from Satiangudi village in Nagapattinam taluk. In its entirety, the image would have been one amongst the outstanding Nataraja bronzes and the remains suggest an early Vijayanagar period. The Somaskanda image from Auvadayarkoil with the Skanda missing is another notable bronze amongst the acquisitions.

Stone sculptures.—Amongst the stone sculptures acquired during the year under report, Mahishasuramardani standing on the head of a buffallo with a natural pose and grace is noteworthy. A Veerabhadra image, unfortunately broken and with the part below the waist missing is by far the most interesting sculpture acquired during this year. This figure, graceful as it is, was transferred from Thanjavur Art Gallery along with the figure of a Rishi. Three huge sculptures of an elephant, a horse and a bull were received from the Pullambadi canal excavation site. The image of Vishnu and Tirthankara purchased during this year are also interesting specimens.

Copper plates.—The most valuable acquisition during this year is the copper plate grant of Sri Veera Pandya. It is well known that the chronology of the Pandian kings is shrouded in obscurity and scholars are on the look out for valuable information on them. The addition of this grant to the museum collection, is therefore noteworthy since it gives

valuable information about the ganealogy of Sri Veera Pandya, whose identity is yet a matter of research. The grant is in two parts in Sanskrit and Tamil using Grantha and Vateluttu characters respectively. The grant records the gift of a land to one Bharatta Pithambara by Sri Veera Pandya. Anoher grant of the Kalinga King Anantavarma Chola Ganga Deva of the early 11th Century was also acquired during this year.

Paintnigs.—As many as forty-two items of paintings were added to the collections. Eight paintings amongst them were received as gifts, five were copied from Chidambaram and Srirangam temples and two were prepared for the archæological section, while the rest were purchased. Amongst the paintings copied from the above two temples, the paintings from Chidambaram belong to the later Chola period and depict lord Vishnu as enchanging Mohini and Siva as Bhikshatana. The Srirangam Murals depic Vishnu giving dharsan to his devotees. It represents the early Nayak period. Sundaramurthi Nayanar on a white elephant and Cheraman on horseback proceed towards Kailas, meeting the dancing damsels on their way. Siva as Somaskanda gives dharsan to these two devotees. This forms theme of one of the paintings prepared for the Archaeological gallery. The other painting depicts Tondaradipodi Alwar, worshipping at the Srirangam shrine. About twenty paintings on glass from Kalahasti were acquired. This tradition of painting pictures on the back of the glass, which was so common during the end of 19th Century has recorded a steady decline and is in a state of exhinction.

Some notable miscellaneous articles like Indo-Chinese bronzes received from Sri T. N. Sethurama Chettiar of Pondicherry and purchased from Messrs. Wellworths of Ootacamund were added to the collections.

Work in the galleries—Additions to the galleries—Metal Images Gallery.—Two bronzes of Thirthankaras and one Yakshi Ambika, rare specimens of Jaina bronzes, acquired as treasure trove from Senganikuppam village, were exhibited on the landing of the first floor in the front building where a series of Nataraja bronzes are exhibited. The group of Tripurantakas and Tripurasundari, a group which has not been exhibited so far, was added to the images of Saivite gallery. Three Aiyanar bronzes and a Subramanya with Valli were also added to the Saivite images gallery. Two bronzes of dancing Subramanya which were on exhibition for long were removed to the reserve collection room to give space for new additions.

New Extension—Sculpture Gallery.—A miniature replica of the famous Rampurva bull of the Asokan age, in plaster, was exhibited, facing the replica of the Didargang Yakshi. This is particularly a welcome addition since this depicts the art as patronized by the State during the Asokan period while the Didargang Yakshi, speaks of the elegance of indegenous art of the same period. It is well known that Asokan art was subjected to the impact of foreign influence particularly from persipolis and the addition of this exhibit explains what was hitherto unexplained.

Hindu Sulpture Gallery.—Seven paintings in oils, depiciting royal seals of various South Indian dynasties were fixed to the wall and exhibited in this gallery. These representations were prepared from the actual seals of the copper plate grants, deposited in this Museum. These seals include the dynasties of the Cholas, Pandyas, Vijayanagar. Vishnukundin, Eastern Chalukyas, South Keralities and Pallavas.

Buddhist Sculpture Gallery.—The Bhattiprolu relics, containing two crystal reliquaries, gold leaves and beads, which were so far exhibited in the New extension gallery, were exhibited in this gallery as they are Buddhist antiquities.

Picture Gallery.—All the paintings which were removed from the gallery to facilitate the repairs to the ceilings were re-arranged and re-exhibited with freshy painted index labels. The gallery was opened to the public after the completion of re-arrangement.

Improvements to the galleries.—Apart from the pediodical dusting of the show cases and cleaning of the exhibits, the following improvements were carried out during the year under review.

Metal Images Gallery.—Seven show cases of the Saivite gallery were distempered with light cream distemper. The cloth linings that had become detached were refixed. Naphthalene balls were placed in all the metal Images cases to prevent the moths destroying the labels and their bindings.

New Extension Sculpture Gallery.—A masonry pedestal was erected to house the Rampurva bull show case. A number of damaged pedestals were repaired. Six damaged label frames were repaired. A Gandharan image was refixed to the wall securely with clamps. Six show cases in the New extension gallery, were cloth lined. All the label frames were varnished. The brass bars, provided for exhibiting the labels of the hero stones were removed and the labels were fixed to the walls directly to improve the appearance.

Hindu Sculpture Gallery.—The Brass bars holding the labels were removed and the labels were fixed directly to the walls. The plaster cast of Sankaracharya from Tiruvottiyur which was slightly damaged was retourched. The Thanjavur pith models of temples, etc., were cleaned.

Buddhist Sculpture Gallery.—The two wall cases, provided for exhibiting photographs were distempered. The Amaravati model show case was repaired, varnished and painted.

Picture Gallery.—Five screens and the cornices provided for supporting the pictures were varnished.

Labelling.—The entire set of big explanatory labels, both in the New extension gallery and Amaravati gallery, were renewed. Seven new labels were prepared for the paintings of royal seals. New labels were also prepared for a number of exhibits in the Picture Gallery. Lacquered gesso work and South Indian toy utensils were provided with fresh labels. About twenty small labels in the New Extension and Hindu sculpture gallery were renewed.

Preservation.—Such of those articles exhibited in the galleries requiring conservation were attended to. The reserve collection of metal images were periodically examined and the bronzes requiring treatment were sent to the Chemical Conservation department. The paintings and other articles in the reserve collection were periodically examined and cleaned.

Research and Publication.—The proofs of the following bulletins of this section were corrected during the year and sent to the press :—

1. Guide to Archaeological galleries.
2. Handbook of Museum technique.
3. The beginnings of the traditions of the South Indian Temple architecture.

The beginnings of the traditions of South Indian Temple architecture, a monograph by Sri P. R. Srinivasan, was published during the year. The following publications now in the press are in the final stages of publication :—

1. Guide to Archaeological galleries.
2. Guide to Buddhist antiquities.
3. Gopuras of Tiruvannamalai.

The monographs of bronzes of South India and Jain sculptures are ready and will be sent to the press soon. A handy guide to Indian temple architecture and sculpture in Tamil is under preparation. A monograph on the *stone sculptures of the Madras Museum*, is also under preparation.

Educational activities and facilities for research.—Scholars of Indology, both from India and abroad are now turning their increased attention to the Madras Museum collections and, as a consequence, there has been a steady increase in the number of scholars visiting this museum with a view to acquaint themselves with the actual specimens. The

following are some of the scholars who were afforded necessary facilities for carrying out their research. Dr. Stella Kramrisch, Professor of South East Asian Art at the Pensylvania University of Philadelphia, the author of a number of books on Indian Art and sculpture, went through the collection of bronzes of this museum. She was also acquainted with the electrolytic treatment of bronzes, being carried out in this Museum and which is unique in India. Mrs. Ruth Dooman of Colombia, Claremont, California, U.S.A., was given information on Amaravati sculptures and bronzes. Dr. Ellfreide Harer, student of Indu Art and Architecture, Calcutta University, was also aforded facilities for taking photographs of some of the exhibits. The copies of estampages of the stone inscription from Uarajam village, were supplied to Dr. Tripathi, M.A., PHD. (Lond.) Post Graduate Professor, Ravenshow College, Cuttack-3. The late Dr. A. S. Altekar, Director, Jayaswal Institute of Patna, was conducted around the galleries. Dr. B. Chabra, Joint Director-General of Archaeology in India was shown some terracotta seals from the ancient Buddhist site of Sankaram. A set of photographs were also supplied to him. Mrs. Bensite of Musee Guimet, Paris, was provided with information on Amaravati sculptures. She was also provided with some photographs of the sculptures. Two research students of the University of Madras were afforded necessary facilities to study the reserve collections. Sri C. Sivaramamurthi, Keeper of the National Museum, New Delhi, was permitted to take photographs of the bronzes, for his monograps on South Indian bronzes.

Educational services to Schools and Colleges.—As usual, two batches of teachers from various schools were conducted around the galleries. All the boxes containing the circulating collection of paintings, sent to various schools for exhibition purposes were received back and a fresh list is awaited from the Director of Public Instruction. The Curator delivered three lectures to the students of the city colleges on Indian temple architecture, inscriptions, and paintings under a Government sponsored scheme.

Photographs added.—A series of photographs covering all the exhibits of the Padmanabhapuram Museum of antiquities were prepared. The Padmanabhapuram Museum is under the joint custody of the Governments of Madras and Kerala.

CHEMICAL CONSERVATION.

The most notable feature of the progress of the section this year was the commencement during February 1960 of the construction of an additional block for the laboratory of the section by the side of the existing building. The idea of extension of the Laboratory buildings had been entertained for some time and accordingly plans had been drawn up. With financial assistance to the tune of Rs. 55,000 becoming available from the Government of India a start was made in its construction. It is expected to be completed by July 1960.

The regular work of the section went on as usual. Twenty-three bronze images were electrolytically treated and after sufficient washing and drying, were given a coating of a solution of celluloid in amylacetate and acetone. Five copper plates and four Swedish plate money coins were similarly treated and protected.

One thousand seven hundred and eighty-three lead coins were cleaned using Amberlite G.R. 120 resin. This ion-exchange process is so simple and effective that treatment of lead coins is being done completely by it. One thousand one hundred and eight copper coins covered with greenish spots of corrosion, were chemically treated and restored. Thirteen silver coins were given treatment with formic acid and rid of black patches of encurstation on them. All the coins were given a suitable protective coating.

Another notable work of restoration undertaken this year was that of two antique textile pieces exhibited in the National Art Gallery. Besides a general discolouration of the cloth owing to the accumulation of dust, there were a few stains as well as some tears here and there. The textile pieces have been cleaned with Lissapol and the dust and most of the stains have been removed. Further treatment is being done.

Seven wooden panels which were thickly covered with tar obscuring all artistic details were cleaned with a warm dilute solution of sodium carbonate. It was possible to remove all the tar by this method and lay bare the artistic work beneath. As a protective measure, a coating of "Ascu" was given to the panels after thorough washing and careful drying of the wood.

The ivory of an ivory casket slightly darkened owing to the gathering of dust, was cleaned using Lissapol in rectified spirits. Gentle rubbing of the ivory with cotton soaked in this solution followed by rubbing with cotton soaked in rectified spirits to remove all traces of Lissapol, was the method adopted in cleaning the ivory and it is being continued.

A set of articles of copper, from Mohenjo Daro were in a badly deteriorated state. They were treated suitably with chemicals and given a preservative coating of celluloid; in the case of two copper rings the only treatment possible was to give a preservative coating of celluloid.

For the first time, a special exhibition was organised by this section; its subject was "Glass". Specimens of different types of glass were obtained from the Corning Glass Works, Corning, U.S.A., Central Glass and Ceramic Research Institute, the Hindustan Safety Glass Works, etc. The exhibition lasted from December 1959 to January 31st of 1960.

The Curator of this section is assisting in planning and organising the Children's section which is to be opened in the earlier half of 1960–61. Preliminary work regarding arrangement of exhibts has been done. Work on this will continue.

Two batches of teachers were given instruction in Chemical Conservation techniques as part of the Museum technique course during May and June 1959. Under the scheme of lectures for College students, three lectures on "Salvaging the Manuscripts of old", "Restoration through Ion exchange" and "Stone and salt—the two Incompatibles" were given by the Curator on 24th, 25th and 26th August 1959 respectively. The lectures were illustrated with a careful selection of slides, a few of which were in colour.

Analysis of limestone used in various objects was carried out and will be continued as part of a programme to study possible variations in the composition of limestone.

Considerable work was done in planning the equipment and the furniture and fittings for the expanded chemical laboratory. This work will be continued during the next year, so that the chemical laboratory may be well-equipped as soon as its buildings are constructed. In the next report it may be possible to report that a thoroughly equipped laboratory capable of dealing with more varied aspects on chemical conservation has come into being.

CHILDREN'S SECTION.

Additions to the collection.—A set of sixteen plaster cast models of extinct animals, a model of the egg of *Aepyornis* and four models of the disections of a frog, rabbit, earthworm and pigeon were purchased from Sekar Modern Cottage Industries. A set of thirteen cloth dolls dressed in the different costumes of India and Ceylon were purchased from Shree Seva Mandir, Madras. A series of glass exhibits of various types of glass were received as gifts from Corning Glass Works, Corning, U.S.A., Central Glass and Ceramic Research Institute, Culcutta, Hindusthan Safety Glass Works, Calcutta, and Kayan (Private) Limited, Bombay.

Work in the section.—Fifteen new show-cases and two demonstration counters were made for the proposed Children's section.

Photographs added.—Five half-size prints of the model showing the circulation of blood in man, model of the ship "Privateer Flame" model of a dissected frog, four dolls dressed in the costumes of Yugoslavia and the model of the Mammoth were taken.

ADMINISTRATION REPORT OF THE NATIONAL ART GALLERY, MADRAS.

The Special Committee of the National Art Gallery met twice during the year under review and selected five paintings for the National Art Gallery. The lighting in the rear panels of the main hall was improved by providing projecting masonite hoods. Four showcases were remodelled and this has doubled the space for exhibition with improved lighting. The windows in the rear hall were covered with asbestos sheets to prevent the sun light from entering. This has increased the wall space, making it possible to increase the number of exhibits. The walls of the rear hall were distempered with a pleasing pale green colour. A complete rearrangement of the National Art Gallery was effected during the year. In the left hall immediately within the entrance were exhibited the paintings of Ravivarma and allied schools consisting mostly of portraits. In the main hall, the exhibits were arranged chronologically beginning from the South Indian traditional school and including also the Thanjavur, Rajasthani, Mughal and Deccani schools and the realistic paintings of both North and South Indian contemporary artists. Is the rear hall, are exhibited the impressionist school of modern art. One bronze image of Kaliya Krishna was added to the exhibits. As many as 25 new paintings were added and seven exhibits were removed consequent on the rearrangement. A new scheme of preparing the labels printed on coloured paper, the colour merging with the background was introduced and the labels of the entire gallery were renewed. Two textiles and one ivory box were sent for chemical conservation.

The following are the acquisitions during the year :—

(1) " Shorab and Rustam " painting in tempera by Sri Jagdish Mittal. (Length 6 inches by height 9½ inches) purchased. Accession No. 1306/59.

(2) " Portrait of my Mother " paintnig in oils by Sri P. Perumal (length 14 inches by height 19 inches) purchased. Accession No. 1306/59.

(3) " The Old Bungalow " painting in oils by Sri P. Perumal (length 20½ inches by 28½ inches) purchased. Accession No. 1307/59.

(4) " Christ in the Garden " a painting in oil (length 19 inches by height 15 inches) presented by Mr. Justice M. Ananthanarayanan. Accession No. 1314/59.

(5) " Village Girl " painting in oil by Sri Santhan Raj (length 25 inches by height 30 inches) purchased. Accession No. 1326/59.

(6) " Village Belles " painting in oil by Sri J. Anthony Doss (length 25 inches by height 30 inches) purchased. Accession No. 1327/59.

(7) " Painting (A) Lady in the chair " painting in oil by S. V. Rama Rao (length 25 inches by height 30 inches) purchased. Accession No. 1328/59.

(8) " Cock Fight " painting in oil by Sri Reddappa Naidu (length 22 inches by height 29½ inches) purchased. Accession No. 1329/59.

The number of visitors to the National Art Gallery totalled to 135,292 during the year as against 101,239 visitors in 1958–59. The daily average number of visitors during this year was 371 and the weekly average 2,602.

The following are a few of the opinions recorded by visitors in the visitor's book of the National Art Gallery during the year under report.

" Not only are the works of art wonderful in themselves, but the good arrangement helps the stranger to get some idea of the scope and purpose of India Art ". Mr. A. G. R. Mason, Minister of Justice, Attorney-General and Minister of Health, Wellington, New Zealand.

" Beautiful bronzes, beautifully shown. A very pleasant atmosphere "— Dr. Edger Shenck, Director, Brooklyn Museum, New York, U.S.A.

" I was glad to revisit this Gallery and congratulate the Curator on the excellent display of his pictures and sculptures "—Professor A. L. Basham, University of London.

" These are refreshingly lovely galleries, with priceless heirlooms well displayed "—Miss, Helen Treesdral Health, Los Angles, U.S.A.

" Oh! What a difference in displaying art objects within these two years. Quite a lot of difference within these two years from 1958. Some one who is really having the artistic taste must have taken charge of the Gallery "—Mr. P. R. Purushothaman, Scientific Instrument Co., Mount Road, Madras-2.

National Art Gallery,
Pantheon Road,
Madras-8, 1st June 1960.

(Signed) S. T. SATYAMURTI,
Superintendent.

ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, PUDUKKOTTAI.

General.

Extra-Mural activities and assistance to Educational Institutions.—The Regional seminar conducted by the All-India Council for Secondary Education for the benefit of Headmasters, Headmistresses and Inspecting Officers was held in December at the Government Training College in Pudukkottai where delegates were addressed on " School Museums ".

The opening of the new Science Block attached to the Government Training College at Pudukkottai was done with an address on the evolution of man.

The Wild Life Week and its importance was stressed at the local Government Arts College under the auspices of its Natural Science Association.

Mr. Douglas Barrett of the British Museum, London, Sri T. D. Meenakshisundaram, the Registrar of Annamalai University and Mrs. I. Singhi, a research student, were given facilities for their study.

Visitors.—One lakh forty-seven thousand one hundred and twenty-two people had visited the museum during the year and the daily average was 527·43 per cent of them were literates.

Last year (1958–59), the number of visitors was 148,382 and the daily average was 537. 42 per cent of them were literates. It will thus be seen that the museum was getting more popular and useful and it is a centre of attraction to any visitor to Pudukkottai.

Distinguished visitors.—Amongst the visitors of high rank may be mentioned His Excellency, Sri Bishnuram Medhi, the Governor of Madras, the Honourable Chief Minister Sri K. Kamaraj Nadar and his colleagues, Mr. Douglas Barrett of the British Museum and Mr. T. M. Narayanasamy Pillai, the Vice-Chancellor of Annamalai University and others.

Every one of these visitors has expressed his appreciation of the museum.

Galleries, buildings and gardens.—The special repairs to the museum buildings for Rs. 24,000 were done during the year. Consequenutly there was a through rearrangement of the galleries resulting in improvements in the arrangement and better display of the show cases. Special show cases to house the bronzes were made and they resulted in attractive appearance apart from safety. The gardens were maintained in good condition.

Staff.—Sri A. Subbarayan Servai, clerk of this Museum, retired on 25th December. 1959 and his place was filled by Sri S. Subramaniam, a candidate selected by the Madras Public Service Commission.

The Curator was on tour eleven days during February 1960 to places in and around Pudukkottai to inspect and remove the loose and ancient sculptures to the Museum.

The taxidermist was on a study trip to the Madras Museum from 14th to 23rd September 1959.

Dr. S. T. Satyamurti, Superintendent, Government Museum, Madras, inspected the Museum during July 1959.

Research and publications.—As usual contributions to journals like " Lalith Kala ", Jaurnal of Indian Museums, etc., were made by the Curator. His study of " The Flora of the Pudukkottai Territory " was being continued.

Government Museum,
Pudukkottai,
28th April 1960.

(Signed) T. S. SUNDARAM,
Curator.

CONNEMARA PUBLIC LIBRARY (EXCHANGES).

The number of institutions sending their journals in exchange for the Museum Bulletins was 168 and the number of different journals received from those institutions was 225 and the number of standard works sent by them was three. During the year under report only one institution, Director, Marine Biological Association, London, was added to the exchange list and no instituton was removed.

Connemara Public Library,
Madras,
1st June 1960.

(Signed) K. RAJAGOPALAN,
Librarian.

ADMINSTRATION REPORT OF THE GOVERNMENT MUSEUM, MADRAS, THE NATIONAL ART GALLERY, MADRAS, THE GOVERNMENT MUSEUM, PUDUKKOTTAI AND THE CONNEMARA PUBLIC LIBRARY (EXCHANGE SECTION), MADRAS, FOR THE YEAR 1960–61.

GOVERNMENT MUSEUM, MADRAS.

GENERAL.

Distinguished visitors.—The following were het disinguished visitors who visited the Government Museum, Madras and the National Art Gallery, Madras, during the year under report :—

1. A pary of delegates from the United Arab Republic.
2. Sri N. K. Bose, Director of Anthropology, Government of India.
3. Rev. Riri Nakayama, Chairman, Buddha Worshippers' Association of Japan.
4. Prof. Dr. Theodore Heuss, Former President of the Federal Republic of West Germany.
5. Miss. Meric Offredi, Hindi Scholar of the Universities, Catholic Dei, Sacro Curo, Milan, Italy.
6. A two-member cultural delegation from the Federal Republic of West Germany consisting of Prof. Paul Theome, Professor of Indology at the University of Tuebingen and Dr. V. Milogoic, Professor of Archaeology at the University of Heidelberg.
7. His Holiness Sri Vidva Thirtha Swamiji of Mysore.
8. A party of about sixty Naga leaders.
9. Dr. T. Suzuki, Buddhist Philosopher of Japan.
10. Mme. Tacomes Lemy, former Librarian of Musee Guimet, Paris.
11. Dr. Slatter, Head of the Cultural Department of the German Ministry of Foreign Affairs.

All these distinguished visitors were received and taken round the Museum by the Superintendent, Assistant Superintendent and the Curator for Art and Archaelogy.

Special Exhibitions.—The following special exhibitions were arranged during the half-year at the Government Museum, Madras :—

1. Miniature models of extinct animals.
2. Recently acquired bronze images of Saivite saints.
3. Latest acquisitions of bronze icons of Ardhanariswara and Chandeswara from Tiruvengadu.
4. War medals presented to the Army and Navy during World War I.
5. Original Manuscripts of Poet Barathiar.
6. Mosses, including a series of newly acquired models illustrating the life history of Mosses.
7. African tribal culture.
8. Golden Pheasent and Albino Pea hen.

Due publicity was given to these special exhibitions in the local dailies through the Director of Information and Publicity. They served to focus public attention on some of the recent acquisitions of the Museum.

Museum Demonstrations to High School Teachers.—As in the previous year, demonstrations to the teachers of the local high schools were conducted in one batch during the months of November and December 1960, for the benefit of teachers of the various local

High Schools in the Museum Galleries on Saturdays. About 30 teachers attended these demonstrations. These demonstrations enable the teachers in their turn to guide their pupils round the galleries intelligently.

Loan of paintings to schools.—The scheme of circulating selected sets of paintings of the Tanjore, Mughal, Rajasthani, Kangra and Delhi schools of paintings, mostly of 18th and 19th centuries, to schools in the Madras State, was continued during the year. Sixteen schools were benefited by this scheme. The paintings will be received back from the schools for redistribution after temporary exhibition in their respective school premises for a period of six months.

Museum Games.—A novel feature of educational activity in the museum during the year was the organization of a series of museum games, for the pupils of the Madras Christian College High School in the Natural History Galleries of the Museum. The games proved quite popular and highly educative.

Children's Gallery.—One of the outstanding features of the work of the Museum during the year under report was the organization of a special Gallery for Children—the Children's Gallery, consisting of attractive illuminated displays on one side of the Mezzanine floor above the Geology Gallery. The gallery was thrown open to the pubic in November 1960 on the Children's Day. By suitable arrangement, a certain amount of continuity has been achieved in the sequence of the exhibits. The exhibits on display now begin with an instructive portrayal of the story of the origin of the earth, followed by a case illustrating the mineral wealth of India and a series of dioramas illustrating pre-historic animals in miniature, set against attractive backgrounds depicting their natural haunts, the story of primitive man and his tools, and the variety of animal life as well as the anatomy and physiology of man are next graphically portrayed by means of a series of self-explanatory enlarged models. This is followed by an exhibit of dolls dressed up in costumes of women, characteristic of the different regions of India. Finally, the story of the development of human transport is explained in a series of models set against suggestive case backgrounds. The entire display is calculated to arouse and hold the interest of young students while at the same time proving to be of real educative value to the children.

This gallery is but a nucleus. It is proposed to enlarge and develop it more fully during the Third Five-Year Plan period when the proposed new building is expected to be constructed.

Audio-Visual Aids.—The sale of picture postcards of bronze images and of common birds of Madras, two colour reproductions of original paintings of the traditional South Indian School in the National Art Gallery, sets of electroplated metal casts of coins illustrating the history of Indian coinage and miniature bronze replicas of the world famous Natesa from Thiruvelangadu (exhibited in the National Art Gallery) were continued during the year as part of the Museum's audio-visual aid programme. These have proved immensely popular especially among schools and small museums in the country. The sale of photographs of important exhibits in the Archaeological Galleries was also continued during the year. Six enlarged paintings of common Madras flowers were prepared and arrangements are being made to get them printed as picture postcards.

Special lectures to College Students and others.—According to a programme of educational services drawn up under the Second Five-Year Plan, a series of 21 lectures on various selected topics related to the fields represented in the Museum were delivered by the Superintendent, Assistant Superintendent and each of the five Curators for the benefit of college and university students during August 1960. The lectures were illustrated by specially made lantern slides and proved to be quite popular.

Tours.—Besides the various sectional tours undertaken by the Curators, the Superintendent undertook a tour to Pudukkottai in October 1960, to inspect the Government Museum, Pudukkottai, and again in February 1961 to study the insect collections in the Government Museum at Pudukkottai and collect study specimens of birds.

Museum Committee.—The Superintendent convened two meetings of the Museum Committee at the Secretariat on 9th May 1960 and 11th October 1960.

Special Committee of the National Art Gallery.—Two meetings of the Special Committee of the National Art Gallery were convened during the year to select and acquire paintings and modern sculptures for the National Art Gallery.

Opening hours of the National Art Gallery.—The National Art Gallery was normally kept open to the public only from 9 a.m. to 12 noon and 2 p.m. to 5 p.m. owing to the limited staff available. At the request of the Government of India Tourist Office, the National Art Gallery is now being kept open continuously from 7 a.m. to 5 p.m. specially for the convenience of tourists. The necessary extra staff required for this was sanctioned by Government in G.O. Ms. 450, Education, dated 4th March 1961.

Donations.—Seventy-four ceremonial and parade garments of the British period were presented to this Museum by the Chief Inspector of Textiles and Clothing, Ministry of Defence, Kanpur. A collection of porcelain dolls were presented to the Children's section of this Museum by Sri P. V. R. Naidu. An Indo-Chinese bronze figure was donated by Sri T. N. Sethurama Chettiar of Pondicherry.

Notable additions to the collections of the Museum.—A bronze figure of Ardhanariswara in tribhanga pose from Tiruvengadu village, Tanjore district acquired as a Treasure Trove piece was a unique addition made to the Bronze Gallery during the year. It belongs to the early Chola period. Other remarkable additions to the Archaeological section during the year include a bronze figure of Chandeswara from Tiruvengadu, Thanjavur district and a unique stone sculpture of Ardhanariswara from Tiruchennapundi village, Thanjavur district. A fine specimen of the Himalayan Cat-bear or Panda and the brilliantly coloured Golden pheasant were among the most natable additions to the Natural History Galleries during the year under report.

Reorganisation and development of the Museum.—The scheme for reorganisation and development of the Musuem with Central financial assistance was continued to be implemented during the year. Modernization of the Ethnology Gallery and parts of the Bird and Economic Botany Galleries was completed and the construction of the additional block for the Chemical Laboratory was nearly completed. In addition, the office block was expanded by the construction of two rooms and the construction of a Natural History Block and a Bronze Gallery was proceeded with up to the basement level. Several important items of equipment such as a slide projector with screen, rolleiflex camera and treadle printing press with types were also acquired during the year with Central grants.

Copying of Murals from temples.—The scheme of copying Murals from temples in South India was continued during the year and the artist, Sri P. L. Narasimhamurti, was commissioned to execute this work at the temples in Rameswaram and Thiruvarur. The work is in progress.

Publications.—The Museum continued to maintain its standard as a pioneer research institution in the State, particularly in the fields of Archaeology and Natural History. The following publications were brought out by the Museum during the period under report:—

1. Story of Buddhism with special reference to Buddhism by Dr. A. Aiyappan and Sri P. R. Srinivasan.

2. Guide to the Archæological Galleries by Dr. F. H. Gravely and Sri C. Sivaramamurthi (Reprinted).

3. Guide to the Buddhist Antiquities by Dr. A. Aiyappan and Sri P. R. Srinivasan (Reprinted).

4. Coins of India through the Ages (Reprinted).

5. Guide to the snakes exhibited in the Reptile Gallery by Dr. S. T. Satyamurti.

6. The Land and Freshwater Mollusca in the collection of the Madras Government Museum by Dr. S. T. Satyamurti.

7. Handbook of Museum technique edited by Dr. A. Aiyappan and Dr. S. T. Satyamurti.

8. Scripts in and around India by Sri V. Kannaiyan.

9. Gopuras of Tiruvannamalai by Dr. F. H. Gravely.

A general handbook on the Museum has also been prepared and arrangements are being made to have it printed. Tamil translations of the Guide to Snakes and the Guide to the Archæological galleries have also been prepared and are under publication at the Government Press. These publications have greatly enhanced the prestige of the Museum and have helped in establishing further exchange relationships with foreign institutions.

The Superintendent published articles entitled " Realism in Museums " and " Shell Cameos " in the Sunday Hindu, and one on " The Children's Gallery of the Madras Museum " in Madras Information.

Loan and gift of exhibits in connection with the visit of Her Majesty the Queen.—A selection of the best bronze icons and stone sculptures in the Museum was loaned to Raj Bhavan on the occasion of the visit of Her Majesty the Queen. An original bronze icon of Parvati, a miniature bronze replica of the world famous Tiruvelangadu Natesa, an album of photographs of South Indian Art, a set of metal casts of coins of India and a copy of the Bulletin on Amaravati sculpture were presented to Her Majesty, the Queen on behalf of the Government of Madras.

Facilities to Scholars and Research workers.—As usual, all necessary facilities were extended to scholars and research workers in studying the museum material in the several sections of the Museum.

Sale of Tourist Literature.—The sale of a selected series of booklets issued by the Government of India Tourist Department at the Museum Sales counter was continued during the year.

Centenary Exhibition Hall.—The following exhibitions and meetings were held at the hall during the year under report :—

Serial number and name of Party or institution by whom reserved.	Period of engagement.	Purpose.
(1)	(2)	(3)
1. Lalit Kala Academy, sponsored by the Progressive Painters' Association.	4th to 10th April 1960.	Exhibition.
2. Munshi Day	11th to 20th April 1960.	Exhibition.
3. Artists of All-India Handloom Board.	23rd April to 3rd May 1960.	Exhibition.
4. The South Indian Society of Painters.	16th July 1960	Meeting.
5. South Indian Society of Painters.	2nd to 11th September 1960.	Exhibition.
6. Dayalbagh, Madras Branch Stand.	13th to 22nd September 1960.	Exhibition.
7. The President, Madras Photo Club, Alagappa Nagar, Madras-10.	4th to 9th October 1960. 4th Preparation; 5th to 9th Exhibition.	Exhibition.
8. Madras Natya Sangh, 2nd Muthuswami Mudali Street, Madras-6.	8th to 14th November 1960.	Exhibition.

THE CAT-BEAR OR PANDA: Ailurus fulgens.

Serial number and name of Party or institution by whom reserved.	Period of engagemnt.	Purpose.
(1)	(2)	(3)
9. Secretary, Progressive Painters Association, Madras.	15th November to 29th November 1960.	Exhibition.
10. The Indian Council for Cultural Relations.	2nd December to 8th December 1960.	Exhibition of books and journals of Japan.
11. Exhibition of Indigenous Arts and Crafts.	26th December to 28th December 1960.	Exhibition of Arts and Crafts.
12. South Indian Society of Painters.	27th January to 5th February 1961.	Art Exhibition.
13. The Book Industries Council of India.	14th February to 1st March 1961.	Conducting Training course.
14. The Madras Amateurs' Photographic Society.	11th March to 14th March 1961.	Exhibition.
15. India Bulgarian Friendship Society, Madras-1.	23rd March to 26th March 1961.	Exhibition.

WORK IN THE SECTIONS.

ZOOLOGY.

New Additions to the collections.—The following specimens were added to the collections during the year under review. *Reptiles.*—One specimen of the marine turtle, *Caretta caretta*—*Birds.*—One Golden pheasant, *Chrysolophus pictus*, one albino pea-hen and a collection of bird skins from Pudukkottai. *Mammals.*—One specimen of the palm civet *paradoxurus hermophroditus* and a mounted specimen of the Cat bear, *Ailurus falgens.*

Work in the Galleries—Additions to the Galleries.—The following exhibits were added to the Zoological Galleries during the year under report :—

1. A plaster of Paris model of Amoeba.
2. A plaster of Paris model of Paramecium.
3. A collection of the following marine crabs :—
   (a) *Neptunus sanguinolentus*,
   (b) *Ocypoda platytarsis*,
   (c) *Eriphia laevimana*, and
   (d) *Grapsus strigosus*

Reptile Gallery.—(a) Loggerheaded turtle, *Caretta caretta.*

Bird Gallery.—

(a) Hoopoe (Male and female) *Upupa epops.*

(b) Spotted dove, *Streptopelia chinensis.*

(c) Golden Pheasant *Chrysolophus pictus.*

(d) Albino pea-hen

(e) *Pitta brachyura.*

Mammal Gallery—

(*a*) Palm squirrel, *Funambulus palmarum*.

(*b*) One mounted specimen of the Cat bear or Panda.

(*c*) Palm civet or Toddy cat, *Paradoxurus hermaphroditus*.

Improvements to the Galleries.—The following improvements, repairs and renovations were effected in the Zoological galleries during the year under review.

Invertebrate Gallery.—Nine explanatory diagrams in the Crustacean gallery wall cases which were old and discoloured, were completely redrawn with Indian ink and re-exhibited.

Fish Gallery.—Some of the fishes in the fish gallery were renovated and re-exhibited.

Reptile Gallery.—New wall cases for exhibiting spirit preserved snakes inside large jars are under construction.

Bird Gallery.—Modernization of the bird gallery was taken up and six newly built cases were added and the specimens exhibited in them without shelves. Three new diorama cases of Egrets and Storks, Night herons and Gulls and Terns were also completed with attractive painted backgrounds.

Mammal Gallery.—Mounted specimens of the Boar and the Nilgiri wild goat were renovated and re-exhibited. A distribution map was put up and a specimen of the palm civet was also exhibited.

The routine weekly checking of the galleries by the Curator, dusting of the interiors of show cases, cleaning of the glass panes of show cases, provision of naphthalene balls, replacement of broken glass panes, rectifying minor defects, refilling, bladdering and painting of the gallery specimen jars and provision of lysol and camphor and powdered naphthalene for the gallery insect cabinets and exhibition boxes, were continued during the year as usual.

Labelling.—(1) Fifty boxes in the Invertebrate gallery containing shells, etc., were relabelled. Many of the labels of the reserves collections (about 40) were replaced by fresh ones.

(2) New labels were provided for the insect cases in the Invertebrate gallery.

(3) Labels of some of the ducks in the bird gallery were touched up.

(4) Descriptive labels and distribution maps have been put up for the Cat bear.

(5) Descriptive labels were provided for the albino pea-hen and Golden pheasant.

Preservation of reverse collections.—The Curator proceeded systematically with the refilling of specimen jars with rectified spirit or formalin, as the case may be; worn out washers of some of the kilner jars were also replaced. Napthalene and lysol-camphor plugs, etc., were provided for the insect cabinets. Naphthalene, gammaxine, etc., were provided for the reserve collection drawers containing shell specimens, reserve collection almirahs, bird skins, etc., systematically. The old discoloured and moth-eaten labels on the reserve collection containers were replaced by fresh labels written in waterproof Indian ink.

Research.—The Superintendent continued his work on the Lepidoptera in the collection of the Madras Museum. The Curator was continuing his research work on the Acrididae in the reserve collections.

Publications.—The Tamil translation of the Guide to the Snakes in the gallery was under publication.

Educational work—Special exhibitions.—The following special exhibitions were arranged during the year under report :—

(1) Miniature models of extinct animals.

(3) The Golden pheasant and albina pea-hen.

Lectures.—The Superintendent delivered the following lectures :—

(1) Preservation of Biological material for School teachers :—

(2) A series of four lectures for college students.

The Curator delivered the following lectures :—

(1) Insecticides, mouth parts of insects and vivarium and its maintenance at St. Christopher's Training College.

(2) A series of two lectures, one on Life in fresh water and the other on animal camouflage at the Madras Government Museum for College students.

Facilities to Research Workers and others.—(1) Mr. C. Sankaran Kutti, a Senior Research Scholar from Mandapam made a study of crabs in the reserve collection in connection with his research.

(2) Mr. Murthy, Lecturer in Zoology, Loyola College, made a study of some of the Arachnid slides in the section.

(3) Sri Y. Radhakrishnan, a Research Scholar from Andhra University did his research work on Mollusca with the help of our reserve collections.

(4) Sri S. Rayappan, Attender, Nirmala College, Coimbatore, underwent a two-week taxidermy course in the Museum.

Gifts to schools.—Butterflies and shells were mounted in separate boxes and presented to C.S.I. High School, Purusawalkam.

Photographs added.—The following photographs were added to the album during the year :—

(i) A view of the bird gallery before modernization.

(ii) A view of the bird gallery after modernization—newly constructed cases.

(iii) Evolutionary tree with newly made show case.

(iv) The Cat bear, *Ailurus fulgens.*

(v) Planktonic net.

(vi) Dredge.

(vii) *Neothynnus macropterus* (side view).

(viii) A view of the bird gallery after modernization with the exhibits.

(ix) One new case in the bird gallery with the exhibits arranged.

(x) Egrets inside Diorama case.

(xi) Butterflies displayed in illuminated show case.

(xii) Stages in the life history of the Frog embedded in plastic (marco resin).

(xiii) Sea gulls and terns—Diorama case.

(xiv) Freeze-dried specimens.

(xv) Plastic infiltrated specimens.

(xvi) Visitors equipped with guidophone.

(xvii) Purse seine.

(xviii) Trawl or Beach seine.

(xix) Beam trawl.

(xx) Typical fyke net.

(xxi) Otter trawal.

(xxii) Half round eel pot.

(xxiii) Half round lobster pot.

(xxiv) Crab pot used in Chesapeeke Bay.

Tours.—The Superintendent went to Pudukkottai to study the insect collections and collect specimens of birds.

Botany.

New additions to the collections.—Roots of *Santalum album* (the sandalwood trees), showing haustorial connections with those of a neighbouring host-plant (*Todelia asiatica*) and showing also a case of abnormal combination among themselves, were collected on the Javadi Hills and added to the collections. Samples (each measuring one yard) of " Madras Bleeding Cloth " and " Madras Handkerchief Cloth " were received as presents from the Madras State Handloom Weaver's Co-operative Society, Ltd., Madras-8. Eight models, attractively depicting the life history of moss, were procured as gifts from the Krishna Models Manufacturing Co., No. 46, Off Najafgarh Road, New Delhi-15. Fresh specimens of moss (Funaria) were collected and added. Paintings of six Madras flowers, and a flow-sheet for the Cork industry series were prepared and added.

Work in the galleries—Additions to the galleries.—Two fresh specimens of moss (*Funaria*) specially treated and preserved *with* colour and one herbarium specimen of the same from the reserve collections were exhibited in the Systematic Botany galleries. An inflorescence of the Banana plant (*Musa paradisiaca*) was another addition to the Systematic Botany galleries. Samples of " Madras Bleeding Cloth " and " Madras Handkerchief Cloth ", and three photographs relating to the products of the Betel-nut Palm (*Areca catechu*) were exhibited in the Economic Products galleries. Two sub-sections of " Cork Industries " and " Rayon from Bamboo " were organized in the Economic Products galleries.

Improvements to the galleries.—Two whole specimens of the Hemp plant (*Cannabia sativa*) were displayed in wall-cases of the appropriate size, in the Systematic Botany gallery. The exhibit of the coloured chart of *Datura fastuosa*, five herbarium exhibits of *Side cordifolia*, *Abutilon indicum*, *Geranium neplaense*, *Biophytum sp.* and *Glycosinis sp.* and eleven other specimens (preserved in formalin) were renovated, and displayed better in the Systematic Botany galleries. The background in one wall case in the Systematic Botany galleries was improved with a suitable lining cloth. The exhibits of fibres were re-classified, re-arranged, and attractively displayed in the new built-in wall show cases in the Economic Products galleries.

Labelling.—Sixteen labels in bad condition in the Economic Products galleries, were neatly touched up and improved. Both the new mural paintings on canvas in the Systematic Botany galleries were provided with painted labels in English and Tamil. The group of mosses in the Systematic Botany galleries were provided with detailed, descriptive labels in English and Tamil. The sign-board at the entrance to the Botany galleries, and two index labels for the exhibits of *Cannabis sativa*, were re-painted afresh. Twenty-seven new labels were prepared, and six old labels were renewed in the Systematic Botany galleries. One hundred and thirteen new labels were prepared, and ninety old labels were renewed in the Economic Products galleries. The newly-constructed built-in wall show cases were provided with labels composed of raised letters cut out of wood. Legends were written out for seven photographs, and 1,478 exhibits were card-indexed

Preservation of reserve collections.—Two newly-acquired " mural paintings " were treated with Solignum and DDT, and protected against insect attacks. Two specimens of moss (*Funaria*) in the reserve collections, were specially treated and preserved with colour. Four of the newly-acquired models illustrating the life-history of moss, were reconditioned and suitably improved As may as 278 herbarium sheets in the reserve collections were cleaned and re-poisoned. Six new specimens of the cork industry series, and six newly-prepared paintings of Madras flowers were neatly mounted for display. Samples of " Madras Bleeding Cloth " and " Madras Handkerchief Cloth " were protected against insect-attacks and mounted. One inflorescence of the Banana plant (*Musa paradisiaca*) was mounted and preserved in formalin.

Research.—An unusual instance of root-combination in *Santalum album*, was studied. Six old photographic negatives were identified and registered. The incubator that went out of order in the Botany laboratory, was repaired and set right.

Publications.—A paper on an unusual instance of root-combination in *Santalum album* and line-drawing of an abnormal fruit of *Carica papaya* and an abnormal Banana plant were prepared for publication.

A copy of Aiyappan and Satyamurti's "Hand book of Museum Technique", was added to the Sectional Library.

Special exhibition.—A special exhibition of "Moss", illustrating the entire life-history of mosses, the different types of mosses in South India and the situations in which they grow, was organized and conducted for a month.

Lectures.—Three lectures were delivered to the students of the City colleges on (*a*) Weed control (*b*) Insectivorous plants and (*c*) Plants in our toilet. Demonstration lectures in the Public Galleries were delivered to two batches of high school teachers.

Facilities to Research-workers and others.—Facilities to research workers and others were afforded as usual, the chief among the beneficiaries being the University of Madras, Sri V. S. Raghavacharilu, Fruit Specialist of the Andhra Pradesh, and Mr. B. Bonnel of the New College, Madras.

Photographs added.—Eight photographs, relating to the new mural paintings in the Systematic Botany galleries, an unusual case of root combination in *Santalum album*, and built-in wall cases in the Economic Products galleries, were added. Twenty-nine new magic lantern slides were also prepared and added.

Tours.—The Curator toured the Javadi Hills and collected specimens to illustrate the various aspects of the Sandalwood tree (*Santalum album*).

GEOLOGY.

New additions to the collections.—Specimens of anthrophyllite schist, vanadium ore, botryoddal psilomelane, fuschite-quartzite, orthoclase felsper, quartz-mica schist and olivine (?) were procured from Sri N. N. Mallya, Wellesley Road, New Delhi, in exchange for our duplicate specimens of spinel, hereynite, rutile and zircon. Specimens of lodestone, topaz, yttrotungstite amphibole nephrite, jade, obsidian and native arsenic were purchased and added.

Additions to the galleries.—A sub-section of minerals with radio-active elements was organized in the Geology galleries. Four berylls of different colours, a pyrope and a topaz were added to the exhibits of precious and semi-precious stones in the galleries. One specimen of pumice stone and another of obsidian were added to the exhibits of rocks. Specimens of crystalline corundum, non-gem-grade ruby, green and brown soapstone, lapis lazuli, orpiment, bauxite, chromite, kyanite, asbestos, serpentine, jade, lodestone and native arsenic were exhibited in the Mineralogy galleries.

Improvements to the galleries.—One photograph in the General Geology galleries and five specimens of Chile saltpetre in the Economic Geology galleries were properly treated and better preserved. The locking-devices in several show-cases were improved.

Labelling.—The Tamil group-label for the exhibits of "Marbles used as building stones" was re-painted afresh. Fifteen labels in the General Geology galleries, eight in the Petrology galleries, seven in the Mineralogy galleries and nineteen in the Economic Geology galleries were renwed. Twenty-one labels beloging to the Economic Geology galleries were neatly mounted. Fifteen new labels were prepared.

Preservation of reserve collections.—Specimens of orpiment, lapis lazuli, native arsenic, topaz, yttrotungstite, amphibole nephrite, jade and pyrope were neatly mounted for display.

Research.—A scheme for starting a separate Geology Laboratory was prepared. Twenty specimens of minerals and one bit of a broken glass, that were received from the District Revenue Officer, Coimbatore-1 were identified.

Publications.—Two papers, one on the use of pliobond in the display of geological materials and the other on the preservation of minerals, were written up for publication.

Zim, and Shaffer's book entitled " Rocks and Minerals " was added to the Sectional Library.

Special Exhibition.—A special exhibition of minerals with radio-active elements was conducted. It included not only the Indian specimens of samarskite, monazite and pitchblende, but also important radio-active minerals from abroad.

Lectures.—Lectures on geological museum methods, were given to the Curator of the Agricultural College Museum, Coimbatore.

Facilities to Research-workers and others.—Facilities to research workers and others were afforded as usual.

Photographs added.—Photographs of the exhibits of borax, chile saltpetre and rock-salt, showing the methods of their preservation and display, were prepared and added.

ANTHROPOLOGY.

New additions to the collections.—Forty-six coloured leather shadow play figures from Kolar, Mysore, were obtained by exchange from Sri Koduru Ramamurthy, Artist, Madras for duplicate wood carvings for this Museum. Seventy-four ceremonial and parade garments of the British period in India were obtained for this Museum as a gift from the Chief Inspector of Textiles and clothing, Ministry of Defence, Kanpur. A radio carbon dating chart was obtained for this Museum as a gift from Dr. Bondapudi Subba Rao, Professor of Archaeology, of the Maharaja Sayajee Rao University of Baroda. Twenty photographs of tribal subjects of size 12 inches by 10 inches on aluminium plates by electro-chemical process were purchased for the museum from Alphin studios, Hyderabad. A collection of 30 potsherds from Arikamedu, an Indo-Roman trading station in Southern India of the 1st Century B.C.—A.D. was acquired for the Museum as a gift from the Director-General of Archaeology in India, New Delhi. The potsherds are representative of the three periods, pre-Arretine, Arretine and post-Arretine of this site which was the first dated site in Southern India on the basis of the occurrence of dated Roman pottery. The imported pottery found at this site include Arretine ware, Rouletted ware and Amphorae, specimens of which are included.

Work in the gallery.—The arms gallery wall brackets where arms of the historic period such as guns, matchlocks, blunder busses, spears, etc., were exhibited were strengthened by the fixing up of additional brackets and the exhibits renovated. The arms gallery exhibits were given better display by painting the backgraund wall and providing newly painted labels for them. Ten built-in cases were made for the Ethnology gallery by the Wood working unit to replace the old fashioned tribal cases which had become obsolete and have since been removed from the gallery. The new built-in cases with concealed artificial lighting have been designed to accommodate the ethnographic materials, models of tribal dwellings, busts of tribal peoples, and these exhibits together with descriptive labels, photographic enlargements and maps illustrating the distribution of the tribes are being arranged in the new cases.

Labels, photographs and maps.—General descriptive labels and maps for the newly built-in tribal cases are in preparation. Over a hundred bilingual labels for the individual exhibits have been put up for the tribal cases. About thirty photographic enlargements of tribal subjects have been put up in the tribal cases to illustrate the ethnographic materials and models exhibited therein.

Preservation of gallery exhibits and Reserve collections.—The routine preservation of the reserve collections of the pre-historic antiquities and ethnographic materials of this

museum were carried out this year as usual. Among these are the new collection of 46 leather shadow play figures from Mysore which are being given preservative treatment and the work is in progress. Wax and turpentine treatment for other ethnographic materials which are in need of the same were given. The routine cleaning, dusting and treating of exhibits with insecticides was carried out this year as usual.

Research and Publications.—A guide book to the Anthropological galleries and collections of the Museum by Sri C. J. Jayadev and Sri M. Raghupathy in English and Tamil has been prepared and is ready for the press. A paper on the "Tali Rite" in South India by Sri C. J. Jayadev is being got ready for the press. A paper on the Muduga and the Irula of Attapady hills, Kerala, by Sri C. J. Jayadev is being got ready for the press.

New Exhibits.—Selected specimens of Roman and Indian pottery, beads and terracottas from Arikamedu presented to the museum by the late Professor G. Jouavau Dubreil of Pondicherry and the present Director-General of Archaeology in India were added to the Gallery exhibit, "The Romans in India".

Special exhibition.—A special exhibition of African Tribal culture was held in the Ethnology gallery of this Museum. The exhibition included a collection of Ethnographic materials of the Amba, Acholi, Bantu, Dama, Ganda, Hima and the Karamoja tribes of the desert regions of Uganda in East Africa. The exhibition was typical of the cattle culture tribes and included ornaments, weapons, utensils, wearing apparel and ceremonial objects. Among these the outstanding specimens are bark cloth worn by the tribal peoples, the musical instrument Sansa, the ceremonial wooden stool, tobacco pipes, arrow heads, spiked wheel traps, cattle bells of tortoise shell and palm seeds. A very characteristic ornament which is no longer fashionable is the lip plug or labret which is also included in the exhibit. This exhibit completes the series of exhibits on world anthropology which already includes the ethnographic materials of the tribes of Australia and the American Indians.

Research facilities.—Dr. H. Sankar, Assistant Superintendent for Archaeology, N.E. Project, Guntur, was afforded facilities to study the R.B. Foote collection of this Museum. Mr. M. M. Singh of the Patna University was afforded facilities to study the prehistoric antiquities of this Museum. Sri C. Margobandhu, student of the Delhi School of Archaeology was afforded facilities to study the R.B. Foote collection of this Museum. Sri K. S. Gaṇapathi Rao, Senior Scientific Assistant, Central Leather Research Institute, Adyar was afforded facilities to examine the leather shadow play figures in this Museum.

Information on Research subjects.—Information on museum research subjects in Ethnology and Pre-history were given to Dr. Heidrich, Research Scholar from Berlin, East Germany, Sri V. R. Devanathan, Field Investigator, All-India Handicrafts Board, Prof. T. Balakrishna Nayar, Principal, Presidency College, Madras, Sri N. Annamalai, Statistics Inspector, Department of Statistics, Madras and Sri H. K. Rakshit, Department of Anthropology, Snowdon House, Ootacamund.

Exchanges.—Forty-six coloured leather shadow play figures from Kolar, Mysore, were obtained on exchange basis from Sri Koduru Ramamurthi, Artist, Madras for a small set of duplicate wood carvings of this Museum. Exchanges of ethnographic materials and pre-historic antiquities with the Royal Congo Museum of Belgium and with the Maharaja Sayajee Rao University of Baroda are in progress.

Donations.—Seventy-four ceremonial and parade graments of the British period was presented to this museum by the Chief Inspector of Textiles and clothing, Ministry of Defence, Kanpur. A radio carbon dating chart was presented to this Museum by Dr. B. Subbha Rao, Professor of Archaeology, Maharaja Sayajee Rao University of Baroda.

Lectures.—Sri C. J. Jayadev, in his capacity as Curator for Anthropology and part-time lecturer in Anthropology of the University of Madras gave a course of three lectures on primive material culture and another course of nine lectures on Pre-historic archaeology

and physical anthropology to the students undergoing the Certificate and Diploma courses in Anthropology of the University of Madras. These lectures which are a regular feature of the working of the Anthropological section of this Museum were illustrated by practical classes and demonstrations during which the students under training were trained in the examination and study of the ethnographical collections and pre-historic antiquities of this Museum and given practical training in Anthropometry.

Photographs added.—Fifty-one negatives (20 films of small size, 13 half size and 18 quarter size) were added to the collection of negatives in this section on anthropological subjects. Thirty enlargements were made and exhibited in the new model tribal cases to illustrate the tribal exhibits.

NUMISMATICS.

New additions to the collections.—One gold Venetian sequin of Alvise Mocenigo IV from Parambur, Tiruchirappalli District, 38 Indo-British silver rupees and quarter rupees unearthed at Andipatta village, Chengam taluk, North Arcot district, and a five franc piece of Nepoleon III found in Saidapet, Madras and 14 gold pagodas of Mysore Sultans, Haider Ali and Tipu Sultan and the English East India Company, were acquired for the Museum coin cabinet.

Forty-seven copper and lead coins of South and North India, mainly Vijayanagar, Chola, Pandiya and Indo-Portuguese were added by purchase while two gold Hoysala Panams and one Roman copper coin were received as gifts. The two gold panams were from Mr. Mukunda Prabhu of Mangalore and the Roman copper coin from Mr. R. K. Thyagarajan of Bangalore.

Other notable additions were thirty-three medals and badges presented by the Ministry of Defence, Government of India for display in the Museum.

Work in the Section.—Thirteen treasure trove hoards of coins were examined during this year and eight of them recommended, after detailed examination, for acquisition, some in parts and some as a whole. Four of these treasure trove hoards have been acquired for the coin cabinet, while the remaining four—two hoards of South Indian gold coins and two hoards of silver punchmarked coins—are still pending acquisition.

Chola copper items pending transfer for more than ten years were attended to and transfer of these old items was completed. Nine items, acquired during the year were transferred to stock. Identification and classification have been completed; the Pre-1932—stock of copper coins—two thousand four hundred and sixty coins—were entered in the stock register for copper coins.

The State coach and its accessories are maintained in good condition.

Research.—The Curator studied in detail two treasure trove hoards of Punch-marked bogus coins, two hundered and forty-one coins in all, unearthed in the Coimbatore district. The symbol groupings on these coins were noted down with a view to incorporating them in the thesis entitled "Madras Museum Collection of Punch-marked coins". The Curator did research on the Telugu, and Eruva Cholas and Hoysalas, particularly on their political and historical background, by studying their inscriptions published in Epigraphy Reports.

Educatonal Work—Special Exhibition.—A special exhibition of British War Medals and badges of the "Great war" was held during the month of August 1960.

Lectures.—Three lectures, one on "Coin and History" one on "Gupta coinage" and one on the "Coinage of Mysore Sultans" were delivered to college students during August 1960. The Curator also gave a talk, under the auspices of the South Indian Teachers' Union, on "North Indian Coinage". A lecture on "Numismatics" was delivered to the Unversity students of First M.A. Archaeology.

ARDHANARISVARA (Bronze),
TIRUVENGADU,
Thanjavur District.

G.M.—2

Facilities to research workers and others.—Information on all aspects of India coinage was given to scholars and students from time to time. Twenty-five copper coins were identified for the trustees of the Oraganti Kanakkayya Naidu Museum, two hundered Indo-French, Indo-British, Vijayanagar and other South Indian copper coins for Sri P.V.R. Naidu and 533, coper and silver North and South Indian coins for a private Museum in Kerala. Information was given on Travancore, Cochin and Kerala coins to Mr. N. G. Unnithan, Director of Archaeology, Trivandrum, along with plaster casts and photographs of these coins in the Madras and Pudukkottai Museum collections.

Photographs added.—Eight quarter size and a half size prints of the Roman jewel, Nandyal, Travancore, Cochin and Kerala coins of the Madras and Pudukkottai Museums and a Western Chalukyan pagoda were added.

ARCHAEOLOGY.

New additions to the collections.—The year 1960-61 is a memorable one in the annals of the Archaeological section of this Museum for some of the acquisitions made during this year were not only unique specimens, but also the most valuable acquisitions, made for the museum, during the past 15 or 20 years. The bronze Ardhanariswara figure, in tribanga posture, is a lovely creation of South Indian Art. The figure, standing on a lotus pedestal with three arms is *delicately* modelled and *finely treated.* It was unearthed at Tiruvengadu village, Shiyali taluk, as a treasure trove find, with a group of other bronzes. The most noteworthy feature of this bronze is that historical evidence regarding its date is available. The figure was under worship at the Swetaranya temple at Tiruvengadu during the 28th regnal year of the Chola King Rajadhi Raja, who donated certain lands for the worship of the idol. This Rajadhi Raja is the son of Rajendra I, and the bronze was thus under worship by 1045 A.D. This figure was acquired for the museum along with a Chandeswara figure of remarkable countenance. The rest of the finds were handed over to the temple for worship which include three Parvathi figures, one Nataraja and one Somaskanda. The treasure trove finds of Tirukkodikavalur which were acquired for the Museum, are also interesting; in particular, the figure of Tripurantagamurthi is a very good specimen. The stone sculpture of Ardhanariswara from Thiruchennapundi village, Thanjore district, which was lyig uncared for is a remarkable achivement in stone carving which was transferred to the Madras Museum. It is in the true Pallava-Chola transitional style. The figure standing on a pedestal is in relief, and is posed in elegant Tribanga posture, with the vehicle, bull, standing behind. Though the nose of the figure is unfortunately broken, the well-treated figure is unsurpassed in its beauty and elegance among all the South Indian sculptures. It is one of the finest acquisitions that the Madras Museum has made during recent years. . A total of 20 bronzes, one stone sculpture and 7 miscellaneous objects were acquired for the museum during 1960–61.

Work in the galleries—Additions to the galleries.—The Goli sculptures stored in the Centenary Exhibition Hall were removed and arranged at the entrance to the Amaravati Buddhist gallery. The bronze image of Punganur Natesa sent to the National Museum, and received back in a broken condition was repaired and re-exibited in the gallery. Buddhist bronzes from Amaravati were removed and exhibited in the Buddhist bronze gallery, with Nagapattinam bronzes, and in their place, the two Mahavira figures, acquired from Singanikuppam village were exhibited. The bronze image of Ardhanariswara from Thiruvengadu was also exhibited in the gallery. The stone sculpture of Ardhanariswara from Tiruchinnapuram village, one Virabhadra and Durga were exhibited in the New Extension sculpture gallery.

Improvements to the galleries.—The plaster models of temples exhibited in the Hindu sculpture gallery, were rearranged. The pith models exhibited in the Hindu sculpture gallery were transferred to the Industrial Art Gallery to provide more space for the Gol

sculptures. Five masonry pedestals were erected in the Hindu sculpture gallery for installing the Goli and Amaravati Buddhist sculptures. The lighting in the Picture gallery was improved by providing screens. The wooden frame around the chaitya slab was varnished. The Rampurva Bull was distempered. A masonry pedestal of uniform height, running all round the early Chola bay was erected and the entire bay was re-arranged to accommodate the newly acquired Ardhanariswara. The stone sculptures of Tripuranntaka and Tripurasundari from Kodumbalur were placed adjacent to each other to facilitate a comparative study. The small bronze in the Saivite and Vaishnavite galleries were re-arranged. The Nagapattinam bronzes were re-arranged. A draft plan for modernisation of the Industrial Arts and the Metalware gallery was drawn up and orders were placed with Government Wood Working Unit for preparing show cases. Due to unprecedented rains this year, a number of paintings on leather exhibited in the Industrial Art Gallery were badly affected and they were removed and sent for chemical conservation. One stone sculpture sent to Raj Bhavan, Guindy, in connection with Her Majesty the Queen's visit was re-exhibited in the Hindu sculpture gallery. Two show cases containing toys and toy utensils were transferred to the Children's section. Periodical dusting and cleaning of the exhibits were also carried out. Five show cases containing Saivite bronzes were distempered.

Labelling.—As many as hundred and fifty labels were renewed in the various galleries. All the small Saivite and Vaishnavite bronzes were provided with labels. Orders were placed with Messrs. Alphin Studios for preparing 450 aluminium labels for the new extension,e Hindu sculptures and Bronze galleries.

Preservation of reserve collections.—The reserve collections was periodically opened and examined. Six bronzes were cleaned chemically. The reserve collection of paintings and copper plates were also examined. The manuscripts of Subramanya Bharati were exposed to fresh air, at regular intervals. The Archaeological shed and godowns were cleaned every week and inspected.

Research.—The Curator prepared a Tamil guide to the Archaeological galleries and the history of Indian art and architecture under the title of " Kalai Chelvangal ". He also read a paper at a meeting of the Archaeological Society of South India on the new finds of Tiruvengadu bronzes. He also contributed an article on the Rare bronzes from Kongu country to Lalit Kala. He is preparing a monograph on Chidambaram gopuras. The Curator continued his research on South Indian sculptures. A fresh catalogue of copper plate grants is also under preparation.

Publications.—1960–61 marks a record activity in the sphere of publications and 7 archaeological publications were brought out during the period. The proofs of the following publications were corrected :—

(1) A Guide to Buddhist antiquities.

(2) Illustrations of Indian sculpture.

(3) An outline of Indian temple architecture.

The clean copies of the following bulletins were printed and received from the press :—

(1) Gopuras of Tiruvannamalai.

(2) A Guide to Buddhist Antiquities.

(3) Illustrations of Indian sculpture.

(4) An outline of Indian temple architecture.

(5) Scripts in and around India.

Of the above publications, the " Guide to Buddhist antiquities " was revised and enlarged. The book entitled " Story of Buddhism with special reference to South India " by Dr. Aiyappan and P. R. Srinivasan and published by the Director of Information and

Publicity was also printed during this period. The reprinting of Nagapattinam and other Buddhist bronzes and Indian epigraphy and South Indian scripts are in progress at the Government Press.

The reprinting of the following bulletins were also taken up during this period :—

(1) Early Eastern Chalukyan sculpture.

(2) Tirupparuttikurndram and its temples.

(3) Three main styles of Indian temple architecture recognised by the Silpa sastras.

(4) Goli sculptures in the Madras Government Museum.

Arrangements for printing coloured picture post-cards of select paintings are also in progress. The Tamil guide " Kalai Chelvangal " is in the final stage of printing. It will mark the beginning of a series of Tamil guides to be prepared on the collections of this Museum.

Educational work—Special exhibitions.—Five recently acquired bronzes, one of Veenadhara and the other of four Saivite Saints, were kept as special exhibits from 20th July 1960 to 20th August 1960 in the New Exhibition Hall. The original manuscripts of Subramanya Bharati were kept as special exhibits during September to commemorate the Bharati Week, which attracted a large number of visitors. The bronze image of Ardhanariswara and Chendeswara acquired as treasure trove finds were displayed as special exhibits during this period. A few bronzes and paintings were loaned to the University of Madras, for organizing a special exhibition in connection with the Indo-French Cultural Festival from 16th to 22nd December 1960. The Curator helped the Department of Archaeology and Ancient History of the University in organizing the exhibition. A number of noteworthy bronzes, which include the famous Tiruvelangadu Natesa, Rama group from Vadakkupanaivur, etc., and paintings of Ravivarma and stone sculptures were sent to Raj Bhavan and exhibited in connection with Her Majesty, the Queen's visit.

Lectures.—The Curator participated in an All-India Radio programme for the middle school children in " A visit to the historical section of this Museum " on 28th July 1960. Three lectures on (*a*) Indian sculptures, (*b*) The story of Indian temples, and (*c*) Paintings of India through the ages, were delivered to the city college students during August 1960. The Curator addressed the city high school teachers on Indian Art and Architecture, under the auspices of the S.I.T.U Research Council. The Curator also contributed an article in Indian art and architecture to the " Guide to 9th standard teachers " published by S.I.T.U. The Curator addressed the students of History and Economics Association of S.I.E.T. Women's College on Indian Art. The demonstration of school teachers was conducted as usual. The complete set of sixteen boxes containing paintings were circulated to various schools for special exhibition.

Facilities for research.—Research scholars who sought the help of the Curator in the field of Archaeology were given the necessary facilities. The reserve collections were shown to the scholars as and when needed. Distinguished scholars were conducted round the galleries. Amongst them the following deserve special mention :—

(1) Dr. Theodor Heuss, Ex-President of West Germany.

(2) Riri Nakayana, Chief Priest of the Buddhist Workshippers' Association of Japan.

(3) Dr. Zuzuki, the great Buddhist Philosopher of Japan.

Photographs and lantern slides.—Two hundred and thirty-five films, 44 half plates and 35 quarter plate negatives were prepared for this section during the period. Thirty-seven black and white and eight colour lantern slides were prepared for illustrating the lectures during this period.

Tours.—The Archaeological Curator undertook a tour to Kumbakonam and Tandanthottam to study some early Chola bronzes and took photographs for including them in the bulletin " Bronzes of South India." He visited Tiruchirappalli to inspect a treasure

trove find kept at the treasury with a view to acquiring them for the museum. The Curator visited Pudukkottai and took charge of the coin collections of the Pudukkottai Museum from the Technical Assistant, as the Curator was on leave. He visited Paruthiyur near Kudavasal and took photographs of some early Chola bronzes. He also visited Naragianpet and inspected the huge Vishnu sculpture with a view to acquire it for the Madras Museum but in view of the transport difficulty, the sculpture was left at the site itself. The Curator visited Srirangam and Chidambaram and compared the copies of the mural paintings, copied from the temples with the originals. He visited Koviladi village and inspected the stone image of Ardhanariswara lying uncared for, with a view to acquire it for the museum. The official guide to the National Art Gallery was later deputed to the place and the image was transferred to the Madras Museum. The Curator visited Pudukkottai during the annual inspection of the Museum by the Superintendent, Government Museum, to facilitate the inspection of coin collections. The Curator visited Tiruvarur and Rameswaram with the artist and selected paintings from each temple for preparing copies. The timely visit of the Curator to Kancheepuram, prevented the destruction of the pillars of Ekambareswara temple which contained the historic inscriptions of Mahendravarman. The pillars are being acquired for the Museum.

Chemical conservation.

The most important development during the year is the near completion of the additional block for the Chemical Conservation section, with the help of funds provided by the Government of India. Simultaneously with the progress of this construction, the furnishing and equipping of the Laboratory was planned and is being done. The Laboratory has been planned to be the best equipped one for this type of work. The building will be completed shortly. Dr. S. Paramasivan, the first Curator of this section and an acknowledged expert in the field has been giving his valuable advice in the matter of planning.

This year the Museum became an Institutional Member of the International Institute of Conservation.

Fifteen bronze images were electolytically treated during this year. A heavy belt of copper with several small accessories was also treated similarly. After the treatment, the objects were thoroughly washed, dried and given a protective coating to prevent corrosion from cropping up again.

Of coins cleaned during the year, 2,891 were of lead, 1,021 of copper and 301 of silver. Of these, except for 69 copper coins which were electrolytically treated, all were chemically cleaned. Wherever necessary, a protective coating was given to the coins after though washing and drying.

Two Kalamkari textile pieces were cleaned. The Kalamkari cloth pieces which were stained and torn in places and completely discoloured due to accumulation of dirt and were not well mounted were carefully removed from the frames, cleaned with Lissapol and Teepol, mended where necessary and mounted on silk which was fixed to a suitable frame. Where silk had been sewed behind the cloth to mend a tear, the pieces of silk was suitably coloured to match the cloth around it. After all this was done, both the pieces were put on display at the National Art Gallery.

By official arrangement, a silver coin, brought from the Indian Museum, Calcutta, by Mr. Sree Ramamurthy, was restored by suitable treatment. The cleaning of some leather paintings has been undertaken and preliminary work regarding its restoation has been done.

A children's gallery was organized and opened to the public on November 14, 1960.

Much of the organizing work in this gallery was done by this section. The Assistant Curator, Natural Science, took keen interest in planning and organizing the gallery and contibuted greatly to the work. The gallery is being constantly improved; a new exhibit, the satellite globe, has been added in January 1961. All the cases were fitted with lights in March 1961.

Three lectures were given by the Curator to College students under the Second Five-Year Plan Scheme. The subjects of the letcures were (1) the restoration of paintings, (2) the application of X-ray, Gamma-rays, etc., to the study of antiquities, (3) Electro-chemistry in restoration of antiquities. Lectures on chemical conservation were given to the students of the postgraduae degree in Archaeology at the University of Madas. Training in conservation methods was also given to a research assistant at the Madras University.

The restoration of the Kalamkari textil epieces and the cleaning of the silver coins from the Indian Museum involved investigation into the type of deterioration undergone and the method suitable for removing its effects.

CHILDREN'S SECTION.

Additions to the collections.—The following exhibits were added to the Children's Section collections:—

(1) A two-foot model of a fully rigged sailing ship.

(2) A model of the sailing ship (Privateer Flame) presented by the Liverpool Museum.

(3) Twenty-eight dolls representing the different national costumes of Yugoslavia.

(4) Model of *S.S. San Francisco Xavier* presented by D.E. Wadia.

(5) A set of 11 wooden models of different kinds of boats used by the fishermen in South India.

(6) A collection of 44 porcelain pieces from China, Japan and England presented by P. Lakshmirama Seshanmmal.

(7) Fifty-one miniature brass utensils used in Palghat.

(8) A set of ten brass figures.

(9) A model of the human digestive system.

(10) An enlarged model of the human kindey.

(11) A model of the respiratory system in man.

(12) An enlarged model of the human brain.

(13) An enlarged model of the human ear.

(14) A model of showing a cross-section of the earth.

(15) A model of a section of the human skin.

(16) A set of six folk toys from Nellore district.

Additions to the galleries.—Most of the models purchased during this year and the previous years were exhibited in the gallery which was thrown open to the public on Children's Day (14th November 1960). The exhibits include three attractive dioramas of models of prehistoric animals and one depicting the story of early man.

Improvements to the galleries.—Fifteen new-show cases were made for the gallery and were provided with internal lighting arrangements. The exhibits were mounted inside the cases to their best advantage. Window screens and a pedestal air circulator were provided for the gallery.

Labelling.—Suitable explanatory labels were provided inside and outside the cases wherever necessary. The different parts of the dissection models were individually labelled. cut-out title labels were fixed on the outside of each case.

Photographs added.—The following photographs were added to the album :—

(1) A set of six photographs of extinct animals.

(2) A general view of the Children's Gallery.

(3) The Dinosaur diorama case.

(4) Extinct mammals diorama case.

(5) Dolls dressed in the different costumes of India.

(6) Photographs of the Rocket, the locomotive engine, first motor bicyle and jet aircraft, automobile, airship and aeroplane.

(7) Photograph of the case " This earth of ours ".

(8) Photograph of the transport case—water transport.

(9) Two views of the Children's Gallery.

ADMINISTRATION REPORT OF THE NATIONAL ART GALLERY, MADRAS.

The Special Committee of the National Art Gallery met twice durnig the period under review and selected a number of art objects for acquiring them for the gallery. The selection included five paintings of the Deccani School, one old Kalamkari painting, one traditional Kalamkari painting, two modern Kalamkari paintings and one bronze casting of the modern progressive school.

The entire set of paintings in the front right room containing specimens of the Ravivarma School was provided with labels. One wood carving was repaired and re-exhibited. The printed textiles were chemically treated and exhibited. All the show cases in the central hall, were distempered and the pictures were rearranged. The famous Natesa from Tiruvelangadu, Rama group from Vadakkupanaiyur and the two paintings of Ravivarma were exhibited at the Raj Bhavan in connection with Her Majesty the Queen's visit. They are now re-exhibited in the gallery. A bronze, depicting Jesus bearing the cross and group, was acquired and exhibited in the gallery. The labels in the central hall and the spoilt, moth-eaten labels in the rear hall were renewed.

The following are the acquisitions of art objects made during the year :—

1. " Rainy Day " painting on paper with water colour by K. Madhava Menon—Purchased—Accn. No. 1383/60.

2. " Awaiting "—Painting in oils by R. Narasimha Rao—Purchased—Accn. No. 1388/60.

3. " Maharaja Chandulal Worshipping Nanak "—A Deccani painting tempera—Purchased—Accn. No. 1389/60.

4. " A Mughal Prince "—A Deccani painting in tempera—Purchased—Accn. No. 1390/60.

5. " A Mughal Princess "—A Deccani painting in tempera—Purchased—Accn. No. 1391/60.

6. " A Mughal Noble "—A Mughal painting in tempera—Purchased—Accn. No. 1392/60.

7. " Scenes from Ramayana "—An old Kalamkari painting in cloth—Purchased—Accn. No. 1393/60.

8. " A village maiden "—Painting by Sultan Ali in Oils—Modern—Purchased—Accn. No. 1394/60.

The number of visitors to the National Art Gallery totalled to 1,51,855 during the
The number of visitors to the National Art Gallery totalled to 1,51,855 during the
year as against 1,35,292 visitors in 1959-60. The daily average number of visitors during

The following are a few of the opinions recorded by the visitors in the visitors' book of the National Art Gallery during the year under report :—

" Suprb bronzes and miniatures. The dancing Siva deserves all of its fame and more." Margaret Spencer, Bed Hills, New York.

" It gave us immense pleasure going round the Art Gallery. We were impressed with the method of display of various art pieces on up-to-date lines." Mr. V. K. Chari and party of Curators.

" Very fine pieces, well displayed ". I especially enjoyed seeing the bronzes, the wood carvings, and the carved sandal wood box. The " Cock-fight " (Modern style of painting) at least justifies " Abstract art ". Mrs. M. Alexander, 7, East Common, Harpenderi, Herts, England.

" I am very impressed by the beautiful works of Art and also the way how they are shown." N. Dieter Sattler, Germany.

" I was very glad to revisit this gallery, and congratulate the Curator on the excellent display of his pictures and sculptures." Prof. A. L. Basham, University of London.

" Very nice collection, and proper organisation. We thank very much for the opportunity of enjoying." Dr. and Mrs. Macura, Belgrade, Yugoslavia.

" A most interesting collection which has helped me to understand better many of the temples we have seen so far." Mr. Frank Martin, New York.

National Art Gallery.
Pantheon Road, Madras,
1st June 1961.

(Signed) S. T. SATYAMURTI,
Superintendent.

ADMINISTRATION REPORT OF THE GOVERNMENT MUSEUM, PUDUKKOTTAI.

General.

Visitors.—The number of visitors during the year 1960-61 was 1,64,928 with a daily average of 587, and 47 per cent of them were literate. In 1959-60, 1,47,122 people visited the museum and 43 per cent of them were literate. The daily average was 527.

Extra mural activities and assistance to educational institutions.—The usual assistance to the educational institutions in and around Pudukkottai was rendered and 61 institutions were benefited by their visit.

Galleries, Gardens and Buildings.—There was a regular rearrangement of all the galleries. The show cases were cleaned and their interior painted to give a natural background to the exhibits. New and arresting name and signboards were conspicuously put up, and all the old labels were renewed. The galleries presented an attractive and arresting appearance.

Gardens.—The gardens were daily looked after carefully and well by the garden peons. They continued to lend their charm and usefulness to the museum buildings.

Buildings.—The special repairs taken up by the Public Works Department, a year back, were completed and the museum buildings looked better and very imposing.

Work in the Sections.

Geology.—Eighteen samples of minerals and five photographs showing the various geological phenomena presented by the Geological Survey of India were added.

A Geological map of Madras and of India showing the mineral occurrence was displayed in the gallery.

A chart featuring the " Geological Time-Scale " was also put up.

The minerals were cleaned and their labels renewed.

Botany.—The samples on the modifications of roots and shoots were replaced by fresh ones.

The dehiscing pods of *Adenanthera pavonia* were exhibited in a separate show-case made for the purpose.

Two photographs, one on the " Night flowering Cactus " (*Cereus sp.*), and another on the Indian Water Lilly (*Nymphaea pubescens*) were put up.

Zoology—Invertebrates.—The cases containing coelenterates and molluscs were cleaned and labelled. Adequate name-boards were suitably put up.

In the entomology gallery a systematic rearrangement of the insects was effected with the old and spoilt specimens being discarded. Instructive charts on " Insect life " supplemented by attractive photographs were suitably displayed.

The rearrangement of the gallery was based on the lines suggested by the Superintendent, Government Museum, Madras, during his study-visit in February 1961. The diorama case containing the " Arthropoda " was converted into the built-in-type.

Vertebrates—Fishes.—Arrangements were made with the Fisheries Department to get the unidentified specimens identified at an early date.

The case housing the " Sword fish or the Peacock fish " was provided with a tube light. Two more cases were internally illuminated.

Amphibians and Reptiles.—The metamorphosis or the life history of the frog, and the skeleton of the frog were suitably displayed. Photographs dealing with the common species of frogs and toads were also put up.

In the reptile gallery a python (*Python molurus*) measuring 6½ feet in length was displayed with its egg kept by its side in a specially designed show-case. The background was made realistic, and the case was lit by concealed tube-lighting.

The show-case exhibiting the common " Marsh Caocodile or Mugger " (*Crocolilus palustris*) was improved with a natural background provided.

A large wall chart in English to distinguish a poisonous from a non-poisonous snake was put up in the snake gallery.

Birds.—Illustrative charts and photographs were exhibited. The unidentified eggs and nests were identified and duly labelled.

The specimen of a " White crow " (*Corvus splendens*) got from Thiruvadanai in Ramanathapuram district was displayed in a special case.

A diorama of the white-breasted water hen (*Amourornis phoenicurus*) was built up. The dioramas of the " ducks, plovers, etc. ", and some common birds were converted into the built-in-types. The case containing the short-toed eagle was internally illuminated.

Mammals.—The shells and horns of the Indian deer were suitably displayed against an attractive background. Lovely and instructive photographs of the Indian deer and antelopes were also put up. Dioramas of the " Palm civet or Toddy-cat " (*Paradoxurus niger*) and the Flying fox or the Fruit eating Bat (*Pteropus medius*) were prepared.

The skeletal parts of the Indian Fin-whale or the Baleen or Whalebone Whale (*Balaenoptera indica*) were properly arranged and labelled. The 65 feet Whale was washed ashore at Hanumanthakuppam, near Cuddalore in 1956 and the complete skeleton with the baleen plates was presented by the Fisheries Department. The gallery is adorned by a series of interesting and instructive photographs.

Economic Section—Agriculture.—Six coloured charts on " Tea-culture " and two on paddy cultivation were put up.

The improved strains of paddy, cholam, and ragi presented by the Agricultural Extension Officer, Pudukkottai, were housed in a suitable show-case and displayed properly.

A wooden pedestal for the timbers used in making agricultural tools and implements was made, and the specimens were identified and labelled.

A glass show-case was made for the models of the agricultural implements and water-lifts.

A suitable stand was made for the " Mhok " made of the trunk of the palmyrah tree.

The herbarium sheets on the several fungus diseases of crops were mounted on glass sheets with the borders bound by passe partout.

The cases containing the samples of manures and fertilisers and the improved strains of grains, pulses, and oil-seeds and grain manure seeds were cleaned and the old and useless ones were duly replaced.

This section was attracting largely visitors from rural areas.

Art and Industries—Paintings.—Bilingual labels (i.e.), in English and Tamil, were prepared for the " Cochin murals " depicting select scenes from the " Ramayana " and Hindu Mythology and Guide-plates were also put up.

A painting of Sir Robert Clive on canvas belonging to the Modern School of Painting was framed, and added to the " Picture Gallery ".

A sandal wood fan of artistic workmanship and beauty was purchased for Rs. 15 and added to the Art Gallery. A standing lamp of metal-ware was displayed in a suitable show-case.

The exhibits relating to the textiles of Tiruvappur and the woollen blankets of Sellukudi, and the sandalwood and lacquer works of Mysore together with the other industrial products kept in the section were properly rearranged, and relabelled bilingually.

Anthropology—Ethnology—Musical Instruments.—The instruments were provided with thin wooden labels. Photographs of the eminent South Indian or Karnatic Musicians playing on their instruments were hung in suitable places in the gallery.

An attractive background to the gallery containing the spears, bows, etc., was provided. Instructive notes were got up for the " Indian boomerang ", and the " Pudukkottai artifacts ".

The prehistoric section was thoroughly rearranged to present a better and more instructive view, supplemented by illustrative photographs, charts and maps.

Archaeology including Epigraphy.—A separate wing to house the historical records of the Pudukkottai State dealing with the " Huzur Records " relating to the transactions which passed between the English East India Company, the Tondaiman Rulers of Pudukkottai, and the Nawab of Carnatic, and also the " Palm-leaf Gazetteer of 1813 A.D. " was opened. Scholars of Historical Research are attracted to this branch, and the records throw much light on the history of South India, especially on its earlier stages.

English translations to the 13 copper plates dating to 1825 A.D. were renewed. So, too were the informative charts on the " Pudukkottai Inscriptions ", Sculptures, Plaster-casts, and Bronzes. New wooden labels were fixed to the bases of the sculptures. The plaster-casts fixed in the wall were protected by glass frames. All the bronzes were protected in show-cases and suitably exhibited. The show-case housing the Nataraja bronze, a Chola iron, from Tiruvarur taluk, was provided with concealed tube-lighting, and a realistic background. The backgrounds of the other bronzes and stones were suitably improved.

The photographs of places of archaeological importance and historical interest depicting the several obects contained in them displayed in the section duly attract visitors, lay and the distinguished, including the scholars and students of research.

Numismatics.—The rich and varied coin collection numbering over 2,000 play their due part in adding to the importance of this museum.

Library.—It continues to play its usual role of usefulness and interest to the Curator, and the interested visitors.

Twenty-five books were added during the year so that it now contains 1,100 volumes.

Staff.—The Lower Division Clerk, Sri S. Subramanyam, resigned his post in December 1960 and Sri P. Veerabhadran, a candidate recommended by the District Employment Officer, Tiruchirappalli, was appointed temporarily to act in the vacancy.

Furniture and fittings.—Show-cases and additions to the galleries were made for Rs. 1,000 during the year. The replacement and remodelling of the old and antiquated show-cases were gradually pushed through.

General.—The Superintendent, Government Museum, Madras, inspected the museum from 4th to 6th October 1960. He visited the museum again for a week in February 1961, to study the insect collections in the museum, and also to collect bird specimens for the Madras Museum.

Research and Publications.—Articles of scientific interest were continued to be contributed to the Museums Journal, Lalit Kala, etc. Work on the "Flora of Pudukkottai Territory" and the "Sculptures of Kodumbalur" was being pursued.

Sri T. N. Bhaskara Tondaiman, I.A.S. (Retired), was given facilities for his work on the South Indian sculptures and temples.

Dr. S. T. Satyamurti, Superintendent, Government Museum, Madras, studied the insect collections in the Museum for his work on "Lepidoptara". Sri P. N. Mohandas, Curator, Fort St. George Museum, Madras, was given the required assistance for his study tour of the Pudukkottai territory.

Sri N. G. Unnithan, Director of Archaeology, Trivandrum, was given information on the "Kerala coins" in the Pudukkottai Museum.

Government Museum,
Pudukkottai,
1st June 1961.

(Signed) M. S. CHANDRASEKHAR,
Curator.

CONNEMARA PUBLIC LIBRARY (EXCHANGES).

The number of institutions sending their journals in exchange for the Museum Bulletin was 180 and the number of journals received from the institutions was 234 and the number of standard books sent by them was four. During the year under report 12 institutions, namely, (1) Professor of Anthropology, Orissa, (2) The Director of Archives, New Delhi, (3) The Acting Librarian, Escuele De Biologia Venezoela, (4) Director, Musco Civico Di Storia Naturals, Italy, (5) The Director, Marine Biological Association, England, (6) The Librarian, Exchange Department, Stanford University, California, (7) The Secretary, National Museum of India, New Delhi, (8) The Secretary, Society of Historical and Philosophical Sciences of the R.P.R. Bucarest-1, (9) Librarian, Slovenska Akademiya, Yugoslavia, (10) Librarian, Brooklyn Museum Library, New York, (11) The Exchange Librarian, the University of Kansas Libraries, Lawrance, U.S.A., and (12) Bhulabai Memorial Institute, 89, Bhulabai Desai Road, Bombay-26, were added to the exchange list and no institution was removed.

Connemara Public Library,
Madras, 31st May 1961.

(Signed) K. RAJAGOPALAN,
Librarian.

EDUCATION AND PUBLIC HEALTH DEPARTMENT.

(Education.)

G.O. No. 413, 25th March 1964.

Museum—Administration Reports—Government Museums at Madras and Pudukkottai and National Art Gallery, Madras, for the Years from 1957–58 to 1960–61—Recorded.

READ—also :—

Letter from the Superintendent, Government Museum, dated 28th February 1964, No. 7616/63-El.

Order—No. 413, Education, dated 25th March 1964.

Recorded.

(By order of the Governor)

J. ANJANI DAYANAND.
Deputy Secretary to Government.

To the Controller of Stationery and Printing, Madras *(for printing and supply of copies).*
„ Superintendent, Government Museum, Madras.
„ Director of Public Instruction, Madras-6.
„ Accountant-General, Madras-18.
„ Director-General of Archaeology in India, New Delhi.
„ Revenue Department.
„ Librarian, Madras Legislature Library, Madras-9.
„ Librarian, Madras Secretariat Library, Madras-9.
„ Industries, Labour and Co-operation Department.